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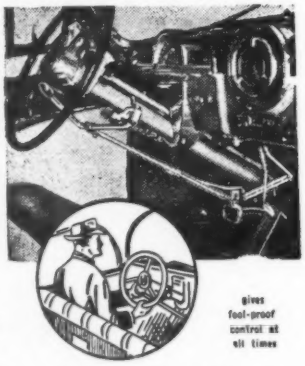

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MEDICAL SERVICES IN AGING AND DE-AGING*

C. WARD CRAMPTON, M.D.**

The number of older persons is increasing in every community, and the services of the physician to meet their needs and enrich their lives are in greater and greater demand.[1]

The situation was well stated by Louis H. Bauer, M.D., past-president of the American Medical Association, in an interview just prior to the 1953 convention: "If a single objective of medical research and practice is to be brought forward, I would say that it is to recognize the importance of keeping people fit in later and later years of adult life."

Method

To meet this challenge, we are developing our work in three areas: first, *prevention* and postponement of deterioration and chronic illness by medical research, personal examination, constructive care, and anticipatory guidance through life[2-5]; second, more effective *treatment* of disease and disability in age; third, efforts toward *de-aging* or *rehabilitation* and restoration in the aging and aged.

We shall present some selected definitions, principles and methods which have been developed largely in the last decade.***

Definitions of Aging and Age

Individual aging begins with cell division and has three stages: (1) growth (development), (2) maturity (stability), and (3) senescence (decline). These three stages overlap and vary in speed, area, length, and character. As we have stated, the rate of aging differs in different individuals. Some men at sixty may be as young as the average at forty, and others may be as old as eighty. Organs age unevenly, yet all organs depend on each other's service and share a common fate and fortune.

There are seven kinds of "age":[1] chronologic, anatomic, physiologic, psychologic, pathologic, statistical and hereditary.

CHRONOLOGICAL AGE.—Age in years is of less and less significance as the importance of the following four "biologic" ages is increasingly recognized. These four ages are distinct, yet united—the targets of our scientific age control effort.

ANATOMIC AGE.—During life, structures appear, grow and mature and decline and atrophy. These successive anatomic stages can be seen in cells, tissue, and organs.[6]

The appearance of the first molar tooth marks an anatomic epoch. Pubescence, another anatomic epoch, is more significant in terms of weight, height and strength, emotional pattern, and social standing than three or four years of chronologic age.

Anatomic age is even more significant in senescence. When brown granules collect in the cells of the heart, when cholesterol appears in the cornea and in the coronary arteries, when calcium is deposited in cartilage and is stolen from the bones, when the thyroid and kidney shrink and the connective tissue increases and hardens, structural changes mark advances in anatomic age.

PHYSIOLOGIC AGE.—This refers to function. It closely parallels anatomic age. The changes from maturity to senescence and to senility are conspicuously physiologic.[7,8] For example, menopause, diminution of hydrochloric acid and pepsin in the stomach and of the salivary secretion, the slowing of nerve reaction times, narrowing of the visual field and accommodation, decline of the gonads, loss of skin elasticity, decline of cardiac function, all mark physiologic aging. These and many other signs appear at different ages in the different persons and do much to make age what it is. They must be found, heeded, and used as guides to our therapy and tests of its progress and success. Physiologic age is a fundamental principle underlying all geriatric diagnosis, prescription, and management.[7,9]

PSYCHOLOGICAL AGE.—Mental and emotional phases

*Reprinted from New York State Journal of Medicine, Vol. 54, No. 20, Oct. 15, 1954. A portion of this article served as the basis for an address by the author at the Adapted Physical Education Institute held at New York University on Dec. 8, 1954.

**Chairman, Subcommittee on Geriatrics, Medical Society of the County of New York.

***See Appendix at end of article for sources of further information, including textbooks, magazines, and Federal, State and collegiate bureaus and committees.

[1]CRAMPTON, C. W. New York Med. 3:10 (May 20, 1947).
[2]*Preventive Aspects of Chronic Disease.* Proceedings of Conference of the Commission of Chronic Illness, Chicago, Mar., 1951, Baltimore Health Publication Institute, 1952.
[3]Editorial: J.A.M.A. 146:653 (June 16, 1951).
[4]CRAMPTON, C. W., *Whole Life Records for Whole Life Service,* 1952 Report New York State Joint Legislative Commission on Problems of Aging.
[5]Editorial: J.A.M.A. 152:711 (June 20, 1953).
[6]ANDREW, W., *Cellular Changes with Age,* Charles C. Thomas, 1952.
[7]CRAMPTON, C. W., *Scientific Factors in Physical Fitness,* Prize Essay, St. Louis Exposition, 1904.
[8]*Idem:* Am. Physical Education Review, 1908, Vol. 13, Nos. 3, 4, 5, 6.
[9]CARLSON, A. J. and STIEGLITZ, E. J. Annals of the American Academy of Political and Social Sciences 279:18 (Jan., 1952).

of life begin, mature, age and end. In early life the appearance of mental abilities is easily measured. In later life there is an accumulation of intellectual powers and values which materially offset the decline of some of the mental and emotional capacities.

Great work in science, art and world affairs has been done by old men, and the trend may be onward if science and medicine continue their successes in geriatrics. Decline in motor and sensory ability begins at thirty or forty, yet automobile "good driving" improves from thirty-four to forty-three and at sixty-five is superior to the twenties.

There are excellent psychologic age tests available, but the physician is more concerned with tests in terms of daily life action, interests, and earning power. Much can be done by the physician in using the body to unburden and restore the mind.

A stagnant life may be refreshed by the correction of common nutritional deficiencies in vitamin B_1, protein, calcium, iron, etc. Attention to the prostate, feet, eyes, liver, or colon will often have an important effect on the mind.

PATHOLOGIC AGE.—A severe or prolonged illness, strain, or stagnation may age a man ten years or more through damage to the body cells and services. Our chief enemy is not age; it is damage. Chronic focal infection in teeth, sinuses, gallbladder, prostate cause aging from drain on resources and damages from toxicity. Ordinarily a man comes for medical care only when sick or disabled or driven by pain. When he gets well, he leaves medical care behind, although he may have within his body a dozen aging pathologic conditions which we seek to discover and remove.

Age Prevention and Postponement

Our efforts to delay and prevent aging must operate in these four aspects of the individual during his whole lifetime (and that of his parents). As aging proceeds, we have an opportunity to work against it. To do this, we must examine, treat, advise, correct, and guide the man throughout the years. The following are the essential of the *Program of Medical Service in Life Management:*

1. Initial Examination—Holistic; comprehensive; basis of whole program.

2. Treatment—Cure, care, follow-up of pathologic and suboptimal physiologic and psychologic function; de-aging.

3. Prescription—Regimen and program of the day, month, year, and life.

4. Continued Counseling—Refreshment of program based on periodic reports and recheck.

5. Re-examination—Full survey at important life epochs.

The initial examination should be regarded as an event of greatest importance, a research procedure covering a period of several days or weeks of observation, test and record analysis, diagnosis, and assembling of all significant factors into a comprehensive well-tested program. It is not an ordinary disease examination (which is included). The subject merits the fullest consideration which cannot be given in the limits of this article.* Some practical points may, however, be of service.

We have found it useful to give the examination in three visits. Previous to the first visit, the patient fills out a thorough report on his previous history, heredity, complaints, symptoms, troubles, fears, circumstances and conditions, family, environment, work, play, sleep, rest, food and life management and outlook. It is helpful also to obtain an hour-by-hour written report of the whole day for four or five days including the week end (food, rest, occupation, incidents, medication, etc.). Special blanks are provided for the purpose (copies available on request). They may be used also later for prescription of regimen. During this period laboratory tests may be taken if they have an added value.

The first visit is the "pilot" examination. The examinee's story is heard in full with his history record. This begins a diagnostic survey covering ancestry, history, and all body parts, organs, and services —blood pressure, heart, lungs, abdomen, joints, nerves, eyes, ears, etc. There is also a search for clues of aging, and every clue is followed up. Tests, reports, and x-rays are ordered. This is the "data gathering" visit.

At the second visit the physician analyzes all items of evidence and all data, retests, rechecks, and correlates all information in terms of the whole body and the whole life.[11] Anti-aging possibilities are looked for and action prescribed. Correction and treatment to be undertaken at once are planned and initiated. A preliminary life program, remedial and constructive, is planned and given. It is to be tried out and reported on at the next visit.

At the third visit, after three to four weeks, the results of the preliminary program are checked, retests are made, and then the full health program for six months or a year is given with all the necessary prescriptions and with the main points in writing for the patient's own guidance.[12] Anti-aging procedures will be planned and arrangements made for them to

*See the present writer's "The Essentials of the Geriatric Examination at 50."[10] The subject is also presented in textbooks on geriatrics and gerontology noted in the Appendix.

[10]CRAMPTON, C. W., Geriatrics 5:1 (Jan.-Feb.) 1950.

[11]Editorial: J.A.M.A. 138:1158 (Dec. 18, 1948).

[12]CRAMPTON, C. W., New York State Journal of Medicine, 38:717 (May 1, 1938).

be carried out as the occasion warrants.

Following the initial examination begins the life-long service of the personal physician (the family doctor gone modern). Illnesses are palliated, cured, and prevented. All body and mind services are brought to their best as a life athlete is trained for the race of the years. This requires periodic report and treatment, the meeting of intercurrent incidents, the employment of the services of the specialist, guidance in life program in diet, exercise, sex, and family management—the whole life,[13] the whole man being considered with the physician as "guide, counselor, and friend." This is a rapidly advancing movement. More technics are developing. The public is looking for it. The medical schools are studying the subject and slowly moving ahead. For example, the 1953 report of Robert F. Loeb, M.D., Executive Officer of the Department of Medicine, College of Physicians and Surgeons of Columbia University, sees the increasing development of "comprehensive medicine" with emphasis upon "the patient as a whole," "the care of the patient through the years" by the well-rounded internist, i.e. a family physician." This is good.[11] [13]

The whole life program of medical life guidance is based upon the continuance of medical examinations throughout the lifetime. For decades we have advocated annual health examinations. We should continue this effort, but we may profit by an endeavor to concentrate upon six highly significant life landmarks which mark the beginnings of life epochs. Each has a great importance and a great significance in the minds of people and is reflected in their thought, sentiment, and customs. At these high points of life it is easier to focus attention of men upon their personal health and welfare. They mean much to life, to people, and to the world. Each epoch landmark marks a period of change, of ripening, of culmination, of advance, the passage of the old, the coming of the new. At this time of adjustment and pliability, advice and direction are needed, sometimes sought and welcomed, and are most fruitful in guiding the years into pathways long, wide, rich, and rewarding. We believe that this is good social and scientific strategy. We have selected six epochs as follows: (1) before and after birth, (2) preschool, (3) puberty, (4) before marriage (or twice the age of puberty), (5) menopause (or three times the age of puberty, but not later than forty-five), (6) geriatrics (four times the age of puberty, but not later than sixty-five).

Each examination should be recorded for the benefit of interim guidance and the service of the next examiner. This forms a cumulative life record, a summary of which should be in the hands of the patient, as we have previously set forth.[12]

This program requires the continued annual or periodic examination and serves every other purpose of the science and practice of medical life guidance. Of this there is much more to be said, but we shall turn to the second phase of our topic, de-aging.

De-aging

The average man of fifty or sixty is commonly from five to ten years "older" than he need be. As a man ages, his body becomes a documentary record of his past years.[14] "The old man is a walking hospital." He shows accumulated damages, defects, tissue poisoning, stagnation, and starvation with half-cured illnesses and infections. These are the results, not of time, but of the hazards that occur from accident, illness, strain, ignorance, or neglect in the passage of time. Our enemy is not age; it is damage, largely avoidable, largely correctible.*

At any age, forty, sixty, or eighty, there are accumulated burdens, defects, and deteriorations which in large part can be discovered and identified by thorough examination. The evils disclosed by examination may often be partly or wholly removed or neutralized. At the same time unutilized sources of vitality and power may be disclosed and developed to great advantage.

The de-aging procedure follows the methods of medical service in life management.[16] As described, the whole man, his environment, his whole life are considered. All resources of science, art, wisdom, and empathy are employed. The support of all medical specialists, social workers and the psychologists is necessary. Contrary to the unquenchable race-old hopes, there is no simple, easy way back to youth nor one remedy for aging. The four biologic ages are basic. There are certain areas of special importance that merit intensive research and therapeutic development, namely the psyche, infections, nutrition, vitamins, stagnation, hormones, structure, antibiotics. We shall present but one, the psyche, selected because of its all-pervading importance in every phase of the program.

THE PSYCHE.—There are physical, psychiatric, social, and economic aspects in the rehabilitation of the aging. Our whole physical program supports the psyche and receives support in turn.

[13]MENNINGER, K., Archives of Internal Medicine 29:318 Aug., 1948.

*Ancel Keys makes an arresting statement to the effect that the American man of fifty has an expectation of dying before sixty, 17 per cent greater than the English, 24 per cent greater than the Italian, and 55 per cent greater than the Swede of corresponding age.[15]

[14]CRAMPTON, C. W., *Medical Aids and Benefits at 40, 60, 80*, 1950 Report New York State Joint Legislative Commission on Problems of Aging, Legislative Document 12, p. 118.

[15]Editorial: Geriatrics 8:620 (Nov., 1953).

[16]DACSO, M. M., Geriatrics 8:179 (April, 1953).

As we stated, we use the body in many ways to help the mind. Direct medication has proved useful. The most recent examples are as follows:

Reports from homes for the aged and mental hospitals record the value of Rauwolfia and its alkaloids. Many disturbed, antagonistic, destructive cases, screaming and fighting, troublesome and dangerous, become transformed to tranquil, cooperative patients, although not every case responds so dramatically. The side-effects are few and mild. It is slightly laxative and antipyretic. This remedy promises well. It is to be employed for long period effects with care and watchfulness.

In a state mental hospital Dr. Sol Levy gave a group of 30 male patients, sixty-one to sixty-eight years old, 3 grains of pentylene tetrazol (Metrazol) and 100 mg. nicotinic acid in an elixir three times a day. There was improvement in personality, activity, and cooperation. For example, 48 per cent attended to personal hygiene, 41 per cent improved in appearance, 38 per cent in alertness, 31 per cent in memory and general activity; all said they felt better. There was a 6-point gain in the Wechsler-Bellevue scale, and material improvement was noted by the 12-point Malamod-Sands-Worchester scale, including the items above. Each of these remedies has been favorably reported by other observers.

We must prescribe for the mind. In large part it manages the life; it rules and is ruled by the body, the family, and the environment. We can aid, but we must help it to govern itself. To do this we prescribe. We create a picture of happy, successful, serviceable, worthy life and recommend procedures that will be made alive and dynamic by this vision.

Five-Point Program for Age Postponement and Youth Prolonging

The question was asked by a national service group, "How to live to be one hundred and have fun?" Our considered answer follows:

1. *Have fun:* Every day laugh, sing, dance, play.

2. *Do work:* Keep doing real worthy work, full-time, part-time, sometime.

3. *Give service:* Add the happiness of others to your own.

4. *Be strong:* Get the best and newest vitality by getting age fighting and rehabilitation methods from your physician. Let him guide you and follow you closely, as a coach for the race of your life.

5. *Praise God:* The happiest people of all are those who enjoy working for Him.

This program gives the broadest coverage and will stand analysis from the medical, psychiatric, social, practical and spiritual standpoint. For example, laughter (three times a day, before meals at least) has physical, circulatory, respiratory, digestive, mental, and social values. Recreation centers for the aged have been developed in New York City, California, and elsewhere. They keep men out of clinics and hospitals and make them happy. "To do work" is normal; to retire to idleness is dangerous (average length of life of a group of 12 retired oil executives in 1951 was nine months, in another observed group two years). "To give service" is to enlarge oneself, for the Ego may shrink with age. "To be strong" is our health theme at its best. "To praise God" gives happiness and content in the spiritual life which integrates everything. It suggests a new word, "serenescence."

In practice, the psychologist, social worker, nurse, recreation specialist, housekeeper, and the cook aid us in diagnosis and treatment. The physician is the one to assemble and guide their services into one harmonious life enrichment program.

Summary

We have made a broad but not exhaustive survey of what the medical profession can do in aging and de-aging, touching briefly on certain principles and giving some practical methods which have proved effective over the years. We have many more people to make happy. They need us. We are opening a new era. Its rewards are already great. Many men and women who have had this medical service look, act, and feel a decade or more younger than their chronologic contemporaries. This is confirmed by scientific tests in the four biologic age areas. The worlds of research, science, social affairs, government, business management, and labor are moving forward. But it is the physician who must lead, guide, and give personal service to the man himself.

APPENDIX

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COMMITTEES

Subcommittee on Geriatrics of Medical Society of the State of New York, Frederic D. Zeman, M.D., Chairman.
Subcommittee on Geriatrics of the Medical Society of the County of New York, C. Ward Crampton, M.D., Chairman.
New York City Committee on Welfare of the Aged, Commissioner H. L. McCarthy, Chairman.
Committee on Welfare of Aged of the Welfare and Health Council of New York City, Kingsley Kunhardt, Chairman.
Community Service Society of New York City, Old Age Consultation Service, Ollie Randall.
National Committee on Aging of National Social Welfare Assembly, New York City, G. Warfield Hobbs, Chairman.

THE RELATIONSHIP OF PHYSICAL EDUCATION TO GENERAL MEDICINE AND SURGERY*

HANS KRAUS, M.D.**

Physical educators, as well as the medical profession, are largely aware of the usefulness of physical education in many medical specialties and for many specific medical problems. Specific exercises play not only an important part in rehabilitation of the handicapped, they are an essential part in treatment of acute and chronic trauma and in orthopedic work. Posture exercises are the concern of pediatricians and orthopedists; exercises in neurological conditions including poliomyelitis, multiple sclerosis are prescribed and used every day. Exercises are now used to facilitate childbirth; they are used to rehabilitate geriatric patients; they are used to restore and recondition the patient who has been bedridden through internal disease; they are used to return the patient to normal life in the shortest span of time after successful surgery. There is one area, however, where adapted physical education is not yet in its full right, and that is the area of prevention, of prophylaxis.

While medicine and surgery are in the process of adapting exercises and physical activity as an essential part of their program, they think of it only in connection with the sick or people needing medical assistance. They do not think of it enough as a means to prevent the need for medical help.

Since, however, we are at a turning point in this attitude, more and more papers appearing in medical journals point out the connection between disease and lack of exercise.

An author has shown that heart disease is much more frequent in a group of sedentary workers than in a controlled group of physically active workers. The connection between inactivity and disease such as high blood pressure, diabetes, and the whole field of "tension syndrome" becomes more and more acute. The connection between endocrine glands and exercise or lack of such has been demonstrated. In short, we are becoming more and more aware of the fact—the well-known old knowledge—that a certain minimum of physical activity is necessary for good health. Good health is here defined along the definition of the World Health Organization namely, not only as absent of disease but optimum possible physical well-being of an individual.

We have evaluated the results of under-exercise in orthopedic disability primarily in the frequent back-ache patient. It seems that about 80% of back-ache sufferers seen in special group clinics were completely free from any medical ailment, but they all showed deficiency in strength and/or flexibility of key posture muscles. A very high percentage of patients improved considerably when treated with special exercises, and they experienced a recurrence of their discomfort and pain when their muscular fitness dropped below a certain level. Similar connections were seen in a host of orthopedic difficulties such as stiff necks, certain types of stiff and painful shoulders, pains in various joints, etc. All these conditions seem to have one contributing cause in common, namely lack of sufficient or adequate use.

You all know that any part of the body not adequately or sufficiently used will lose its efficiency. We all are familiar with muscle atrophy and muscle stiff-

*Presented at The Adapted Physical Education Institute, New York University, Dec. 6, 1954.

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ness resulting from inactivity. If so many of these conditions seem to be due to inactivity, why not prevent them?

The question arises: Are our lives really physically so inactive that they may form the basis for inactivity disease? It seems they are.

The body is biologically geared to a very high calorie output. We are created originally as primitive men who probably spent some 6,000 or more calories a day, running, lifting, hunting, fighting in order to survive. We are still born with the same biological bodies and we use them more often than not at a 2,000 calorie level. What exercise we get is frequently modified to a point where instead of being helpful it can even produce harm by identical repetitions and one-sided movement.

A recent survey made on 16,000 children in Eastern seaboard areas and comparative studies in three different countries abroad[1] have shown that the relative ability to pass six simple *minimum* muscle strength and flexibility tests of key posture muscles is considerably smaller here than in comparative groups abroad. Our children failed these tests at 56% and the comparative tests abroad showed failures at around 9%—this is not the place to go into details. The ones of you who will attend the Tuesday afternoon sessions will get more information about this special study. It emphasizes, however, the fact that we, and especially our children, do not seem to get in our normal life the exercise that children and adults in other countries are getting. This is due to our much more advanced mechanization, much more advanced when compared with any other country anywhere. It is further due to some of the attitudes of us and the parents of our school children who feel that the mind and emotions are more important than the body. We all know that it is not so; we know that a sound balance of body and mind is necessary, but we do not act according to this knowledge. The average parent is well informed about the need to protect their children from emotional trauma, but very few realize what they are doing to the development of their child if they lock them in playpens, do not encourage them to use their bodies, scare them of activities which seem dangerous, give them school buses, and take them on Sunday drives instead of Sunday walks.

It is here where our physical education can step in and can do a tremendous job of prevention, a tremendous job in an attempt to supplement the daily minimum need of our children and, if possible, also increase the physical activities of adults.

Lack of physical activity, like the lack of vitamins, can be cured by providing the lacking agent. Like the lack of vitamins or like vitamin deficiency, a one-time or short time administering of the lacking agent results in only temporary help. You have to eat your spinach or your vitamin pills constantly if you want to remain at your best—you have to provide for natural exercise, for games, or for exercises in special adapted programs to supplement normal physical activities if they are not sufficient. Here is indeed a goal worthy of all the efforts of physical education and medical profession alike: Prevention of many preventable diseases by changing an attitude which results in the conscious or unconscious neglect or deterioration of our muscles and with them—more than we like to admit—of our whole body and of our emotional life.

The pent-up irritations due to lacking physical outlets are responsible for many of our tension diseases, emotional upsets, and even affect our ability to react and think as clearly as we could if unencumbered by these nervous irritants.

Let us, therefore, not forget that the best cure is prevention. Let us not concentrate only on giving our efforts to the sick, but let us try to prevent sickness by teaching and, still more important, by actually doing.

[1]Hans Kraus and Ruth P. Hirschland, "Minimum Muscular Fitness Tests in School Children," *The Research Quarterly* 25:2:178-188, May, 1954.

HONORING THE HOSPITALS OF AMERICA

National Hospital Week

MAY 8–14, 1954

NEW DEVELOPMENTS IN ARTIFICIAL LIMBS*

MARSHALL A. GRAHAM, B.S., M.S.**

It has been estimated that there are at present approximately 1,000,000 amputees in this country. It has been further estimated that about 40,000 new amputees are added to that number annually. Compare this figure to that of 17,000 servicemen who lost their limbs as a result of war wounds and operational injuries during the four years of World War II[1] and we see that peacetime is no indication that amputation becomes a less formidable rehabilitation problem.

Since its inception in 1945, there has been a concerted research program in the field of artificial limbs under the direction of the Advisory Committee on Artificial Limbs (ACAL) of the National Research Council. The several aims of this program have been as follows:

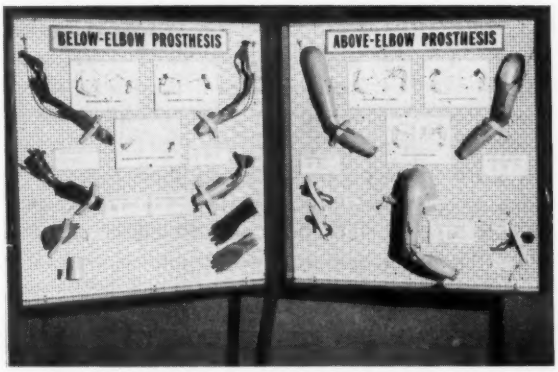
1. To develop better artificial limbs for the amputees of this country and of the world.

2. To develop better techniques of prescription, fabrication, fitting and training in the use of artificial limbs.

3. To pass along results of the research efforts to amputees, through agencies with which they come in contact, such as limb-shops, private clinics, Veterans Administration Clinics and professional organizations.

It is the purpose of this paper to present a description of many of the prosthetic devices that have been developed for use by amputees. Some of these devices have recently been put on the commercial market while others are still in an experimental stage. I do not plan to discuss here any devices that have been routinely available in the past. Many of the items to be described have been through a series of amputee tests lasting several years before their final acceptance for general distribution.

While extensive work has been done in both the upper and the lower extremity fields, the results with upper extremity prostheses have progressed to a point where an educational program covering the continental United States is presently under way. Known as the Upper Extremity Field Studies and administered by the Prosthetic Devices Study of New York



UPPER EXTREMITY PROSTHETICS DISPLAY BOARD Prepared as a cooperative effort by the Prosthetic Devices Study, New York University; the Advisory Committee on Artificial Limbs, National Research Council; and the Prosthetic and Sensory Aids Service, Veterans Administration.

University, it is bringing to the country at large, the best practices and the latest developments in prosthetic devices for the arm amputee. Here are some of the developments:

A major advance in artificial arms has been in the improvement of fabrication techniques. Plastic has become the material of choice to replace other materials such as wood, fibre, metal, leather and celastic, (a) because of its lightness with strength and (b) because of the ease in which the stump contour can be duplicated by means of casting the stump and laminating the plastic material over a male mold of the cast. The plastic arm is neat-looking when well made as well as being durable and sanitary.

Also, the techniques of prescription, checkout and training have come under critical appraisal of many agencies and have been tremendously improved.

Before discussing specific components of artificial arms, I would like to mention, without elaboration, many of the refinements of the small items of hardware that are used in their fabrication. These include steel cables; terminal cable attachments; retainers, retainer plates and housing cross bars for cable housing guides; and a wrist unit for wrist disarticulation amputees. Also, there is a tendency today to get away from the heavy leather types of harnessing and to resort to vinyon or nylon materials. Harness types have become more standardized, the

* This is the first of two sections of a discussion of new developments in artificial limbs. Part II will deal exclusively with lower extremity prosthetics.

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[1] KESSLER, HENRY H., M.D., "The Upper Extremity—The Physician's Part," *Conference Procedings*, National Rehabilitation Association, New York City, October, 1950.

most common being the below-elbow figure of eight and the above-elbow figure of eight.***

Following are discussions of various components of upper extremity prostheses that have either been made commercially available fairly recently or are in an advanced stage of development and are available in the research program.

1. *The APRL Outside Locking Elbow Hinge* was developed for use in cases of long above-elbow amputations or elbow disarticulation types where a standard elbow unit would make the prosthetic upper arm longer than the natural one. The outside lock can also be used for the extremely short below-elbow amputee (a) when the stump is too short for a step-up type of elbow unit with a split socket, (b) when the stump musculature is not strong enough to hold the weight of the prosthetic forearm with the elbow flexed, or (c) when the short stump allows limited elbow flexion. The lock is incorporated in one of the elbow hinges, usually placed medially on the arm. When the plunger is pulled to a halfway position, it remains there and the hinge is unlocked. When the plunger is pulled out fully, the arm is also unlocked, but relaxation of the cable allows the plunger to snap back into a locked position. Many times during operation the amputee has to hold the plunger out while flexing or extending the prosthetic forearm at the elbow. The plunger is controlled by a cable that is operated by stump and shoulder movement.

With the APRL design causing difficulty of operation for the amputee, a commercial model, called the Sierra-APRL Outside Locking Elbow Hinge was designed and is at present available to the public. Although still not of the preferred "direct" alternating type, this model has achieved some success in amputee use.

There are seven locking positions in the Sierra model. There is a "hold-out" action in the operational characteristics of this elbow. With the elbow unlocked, tension on the elbow lock control cable raises the locking plunger. Locking does not take place until cable tension is relaxed allowing the locking plunger to seat itself into one of the notched locking positions on a moving quadrant. Unlocking is a direct action with no hesitation involved.

With operational difficulty still involved in the Sierra model, current development is bringing about the Hosmer E-500, Outside Locking Elbow Hinge which is of the direct alternating type.

The two generally accepted elbow units for the above-elbow amputee are the Northrop Model C and the Hosmer E-300 and E-100 elbows. A good description of these elbows with cutaway drawings of their mechanisms can be found in an article by Lt. Colonel Maurice Fletcher.[2]

2. *The Sierra-APRL Wrist Rotation Unit* is undergoing test at the present time by amputees fitted through the Upper Extremity Field Studies. It is to be considered for below-elbow amputees. The unit is laminated into a forearm with two shells, one molded to the stump and moving with the stump and the other acting both as a cosmetic cover for the entire forearm and as an anchor for the casing of the rotation unit per se. The unit is located in the wrist area. It utilizes the principle of humeral rotation for its activating force. When the inner shell is rotated, the terminal device rotates a greater amount (2.3 times) due to a system of ball-bearings within the unit casing. Rotation is only possible when the elbow is at full extension due to a locking plunger in the unit that is attached to a cable which runs to a lever arm at the elbow joints. When the elbow is full extended, the locking plunger is withdrawn, allowing humeral rotation to react upon the terminal device as stated above. In some instances, it has been fitted to below-elbow amputees with limited but usable pronation-supination. In such cases, the locking action is eliminated, thereby allowing rotation in all positions of elbow flexion. More investigation is necessary before this unit will be suitable for general distribution.

3. *The Sierra Model B wrist flexion unit* is a streamlined version of an item that has been available previously. It allows for three settings of wrist attitude with provision for use with any terminal device. It is operated manually. This device should only be used if the forearm of the prosthesis has been made short enough to allow its placement between the terminal device and the distal end of the forearm, as it adds about 1¾ inches to the length of the prosthesis. Its advantage is mainly in the fact that it allows the amputee to reach closer to the body for personal care. This becomes most useful in the case of a shoulder disarticulation or of a bi-lateral amputee.[3] It can also be considered for amputees fitted with the new outside locking elbow hinges described above or in other cases with special functional considerations.

4. *The Hosmer F-M Wrist Disconnect* was developed during the course of the research program when

[2]FLETCHER, MAURICE J., LT. COL., USA (MSC)), "The Upper-Extremity Prosthetics Armamentarium," *Artificial Limbs—A Review of Current Developments*, Advisory Committee on Artificial Limbs, National Academy of Science, National Research Council, Washington 25. D.C., January, 1954, p. 21.

the need for a facile method of exchanging terminal devices on prostheses became evident. The unit consists of a wrist size casing with an operating button and a steel serrated insert. The steel insert threads onto the stud of the terminal device to be used. The insert can then be placed into a recess in the center of the casing face while the operating button is depressed. The button is then released and the stud is fully seated in the unit by applying pressure inward. Once fully seated, the insert is prevented from rotating by the serrations previously mentioned.

Rotation is possible by pressing the operating button against the unit, which releases the insert. The terminal device that is attached to the insert can then be rotated to a desired position and when pressed inward, once again locks in place.

The terminal device can be removed from the prosthesis by holding the operating button down and withdrawing the hook or hand and the attached insert from the unit casing.

Now I would like to discuss briefly several of the terminal devices that are considered by many of us in the research program to best meet amputee needs.

1. *Dorrance 55 and Dorrance 555 and 88 hooks.* These are refinements of the older Dorrance 5 and 8 hooks. They are of the voluntary opening type and are powered with rubber bands looped about their bases. The hooks are made of aluminum and their major advantage is in the lightness of weight. The fingers are lyre-shaped and they have either inserts on the inside (Dorrance 555 or 88) or have shaped rubber sleeves that fit over them. (Dorrance 55). The Dorrance 55 is a steel hook that has slanted fingers as does the original Dorrance 5, but the fingers are rubber lined.

2. *Northrop Two-Load Hook*[4]—Also of the voluntary opening type, the Northrop two-load hook is powered by means of two coil springs that take the place of the rubber bands. This eliminates the need for replacement of broken rubber bands and also allows for a selection of one of two prehension loads (i.e., generally three and one-half or seven pounds) by means of a little lever (manually operated) set on a side of the hook thumb. The prehension loads are adjustable upon request at the factory. This selection possibility has many ramifications for function that I will not go into at this time.

3. *APRL Hook*[5] [6]. The APRL hook is a voluntary closing device which means that the action of the amputee as he applies tension on the control cable closes the fingers of the hook. As soon as the closing action is terminated and pressure is taken off the cable, the hook automatically locks by means of the mechanism within the hook body. The fingers will remain locked in the same position until an amount of force is applied to the hook through the cable that slightly surpasses that used originally to close the hook. When the locking mechanism releases, the amputee can relax and the fingers spring open. A major feature of this hook is that the amputee can control the amount of pressure he wishes to apply by varying the amount of force exerted during the closing action. He can also stop the closing action of the fingers at any point from full opening to full closing. In this way objects of a fragile or small, as well as of a heavy nature, can be handled with little difficulty.

There are several other features of the hook that are worth mentioning. The fingers can be set for either a small or a large prehension opening. The small opening is about 1½ inches and requires less shoulder excursion for operation. The large opening is about 3½ inches (used for holding large objects such as a glass water tumbler). A small switch on the top of the hook body allows for choice of opening by the amputee. If the switch is set in between these two choices, the locking action of the hook is eliminated (free wheeling) allowing for fast repeated grasping operations.

4. *APRL Hand*[7] [8] [9] [10]. The APRL hand was developed concurrently with the hook just described. The operation is identical to that of the hook, but there are several feature differences that are important to discuss.

The hand was developed to provide a terminal device that would combine functional with cosmetic qualities. It closes, locks, and opens in the same man-

[3]Report on Conference on Problems of Upper Extremity Prosthetics, August 17-21, 1953, New York City, Section A-3a p. 4.

[4]"Shakedown Test of the Northrop, Double-Load Hook," unpublished Report No. 115, Research Division, New York University, 1951.

[5]GRAHAM, M.A., AND BERGER, N. "The Functions and Use of APRL Terminal Devices," *Journal of Occupational Therapy*, June, 1954.

[6]*Service Test of the APRL Hook*," Report No. 115.04, Research Division, New York University, 1949.

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[8]"*Field Test of the AFRL Hand and Cosmetic Glove*." Report No. 115.12, Research Division, New York University, April, 1951.

[9]GRAHAM, M.A., AND BERGER, N. "The Functions and Use of APRL Terminal Devices," *Journal of Occupational Therapy*, June, 1954.

[10]GRAHAM, M.A., "A Study of the Acceptability of the APRL Hand and Cosmetic Glove by Upper Extremity Amputees," unpublished Master's Thesis, Springfield College, Springfield, Mass, March, 1952.

ner as the hook, and provides for the same excellent control of the amount of pressure desired during use. There is a choice of two openings for the hand to allow for large or small objects. The choice of openings is left to the amputee and is accomplished by setting the thumb in either of two positions.

In addition to these functional features, the hand is made from the mold of a human hand. It is covered by a cosmetic glove that is mass produced, but which has an amazing amount of realism that has provided its wearers with many stories of how they have "fooled" people. The gloves are available in several Caucasian and Negroid shades that are chosen by the amputee to most closely match his or her natural hand.

All of these terminal devices are now available commercially for civilian as well as veteran amputees.

A phase of work in amputations that is receiving more attention by the research program is concerned with cineplastic operations (muscle tunnels). Recently the biceps cineplasty for the below-elbow amputee was approved by the ACAL as an accepted procedure for general use, although it is still not widely practiced.[11] The technique provides for placement of a tunnel of skin through the belly of the biceps muscle. At the same time the insertion of the biceps is severed to allow differtiation of action of the biceps from the brachioradialis, as well as to allow for adequate excusion of the tunnel during contraction for the purpose of operation of the prosthetic device. Exercise is given to the biceps to develop strength and increase usable excursion. Training in the differentiation of the actions of the biceps and the brachioradialis is necessary, since elbow flexion is accomplished by the brachioradialis and terminal device operation by the tunneled biceps. The amputee must be trained to contract the biceps, in which the tunnel has been made, with the elbow in all positions.

The prosthetic device for the cineplastic tunnel is one that eliminates all harnessing above the upper arm. Suspension of the prosthesis is attained by an epicondyle cuff or straps about the upper arm (making sure that they do not interfere with the biceps action). This type of equipment eliminates the sometime awkward action of the shoulders, noticeable with many amputees during operation of their prostheses, as well as the discomfort of shoulder harnessing.

Present cineplasty control systems in general use, but still under investigation include the APRL and the UCLA types. The one commercially available as a kit is the UCLA system. It has been recommended that voluntary closing terminal devices (APRL hand or hook) be used for this type of prosthesis.

The APRL terminal devices, because of their voluntary closing nature and the available prehension forces tend to most fully realize the potential of the biceps muscle tunnel. In addition, the full cycling of the APRL hook or hand (opening fully before subsequent closing and locking action can be attained) helps to maintain the stretch characteristics of the muscle tunnel that is important in its use. Good discussions of the cineplastic operative technique can be found in articles by Dr. Spittler and by the Prosthetic Devices Research Project of the University of California.[12],[13]

There are many more components for upper extremity prostheses that are presently under investigation. These include elbow units for above-elbow or shoulder disarticulation amputees such as the Sierra Model D, Mark II, the Hosmer E-400, the electric elbow lock and the small child elbow.

Several arms have been built at the Army Prosthetic Research Laboratories incorporating the hand and hook mechanism within the forearm shell of the prosthesis. Several modifications of the APRL Hand are in progress. One of these, the replacement of a tension spring in the return mechanism by a compression spring has recently been incorporated in the production model to make the hand easier to operate. A new cosmetic glove material is being sought that will outlast the present type. An active cosmetic hand that operates on the same principle as the Northrop-Sierra Two-load hook has been tried.

The foregoing has been an attempt to present a picture of the present status of development of prostheses for the upper extremity amputee, both as to availability at present and hopes for the future.

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[11]Minutes of National Conference. Artificial Limb Program. Advisory Committee on Artificial Limbs, National Research Council, Washington, D.C., May, 1952.

[12]*Biceps Cineplasty and Prosthesis for Below-Elbow Amputations,"* prepared by the Prosthetic Devices Research Project, University of California, for the National Research Council, April, 1950.

[13]SPITTLER, AUGUST W., COL., MC, AND FLETCHER, MAURICE J., LT. COL., MSC, Technique of Cineplastic Surgery and Prosthetic Appliances for Cineplasty," *American Academy of Orthopaedic Surgeons,* Instructional Course Lectures, J. W. Edwards Co., Ann Arbor, Mcihigan, Volume X, 1953.

SOME QUESTIONS AND ANSWERS PERTAINING TO CORRECTIVE PHYSICAL EDUCATION PRACTICES FOR BOYS IN PUBLIC SECONDARY SCHOOLS

ELMER A. GROSS, Ed.D.*

The American Association for Health, Physical Education, and Recreation Committee on Adapted Physical Education reported an estimated four million children of school age in the United States with physical handicaps. Only 11 per cent of this group requiring special educational services are receiving them through special schools and classes. The vast majority of exceptional children are attending regular schools.[1] These figures indicate that the problem of educating the physically handicapped child constitutes a challenge to the schools of the nation. What can the public schools do to meet this challenge?

Many physical educators in the public schools would like to start some sort of remedial program for the boys who cannot fully participate in the required physical education program. However, these physical educators have many questions which they would like to have answered by some of the authorities in the corrective physical education field. In an effort to help some of these physical educators get started, a number of questions which trouble beginning teachers in a remedial program have been asked by 20 authorities in the corrective field. As may be expected, these questions were answered in various ways. Listed below are the questions and some of the many comments which each question elicited from the authorities.

QUESTION 1.

Some of the reasons given by public secondary schools for their lack of corrective physical education programs for atypical boys were: physical education staff schedules too full now; physical education staff not adequately trained; no time available in the school schedule; inadequate facilities and equipment; insufficient number of boys to justify a program; and do not believe corrective physical education is the responsibility of the school. Are these valid reasons for the lack of corrective physical education programs?

Comments:

a. These are reasons but not valid reasons for the lack of corrective programs. Physical educators who develop programs based on fundamental human needs would provide for "corrective" work.
b. There isn't any reason which could justify the lack of a corrective physical education program. Physical education must be adapted to each individual and that means atypical as well as typical.
c. It is easy to find reasons why corrective physical education cannot be offered. Hiding behind problems is easier than working them out.
d. In general, a modified physical education program is *just* as important as a regular program.
e. If any money is being spent for a physical education program, it *is definitely* the responsibility of the school to use some of these funds in conducting a corrective physical education program.

QUESTION 2.

How frequently should medical examinations be given to secondary school students?

Comments:

a. Medical examinations should be given yearly for the atypical individual; more often if the physician or corrective physical education teacher deems it necessary.
b. While medical examinations should be given to secondary school students as often as deemed necessary with each individual, it is the follow-up procedures which are very important.
c. Medical examinations should be given to secondary school students every two years with more frequent examinations of children with handicaps and those suspected of developing handicaps.
d. Medical examinations should be given every year; however, every two years would suffice if the teacher used a screening test periodically.

QUESTION 3.

When should all or most of the atypical students be identified through medical examinations or other acceptable means in order to be duly assigned to corrective physical education classes?

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[1]American Association for Health, Physical Education and Recreation Committee on Adapted Physical Education, "Guiding Principles for Adapted Physical Education," Journal of the American Association for Health, Physical Education," *and Recreational*, April, 1952, p. 15.

Comments:

a. Atypical individuals should be identified through medical examinations as soon as possible in order to plan the corrective physical education program.
b. Pre-school clinics can be used to identify atypical students. If the school is going to do something about these students, it should start early.
c. Ideally, for maximum protection of each student, he should be examined and identified before being allowed to participate in any activity.
d. If any benefits are to be derived from a corrective program, medical examinations should be given to the students during the first month of school.
e. Students should be placed in the corrective physical education program at the beginning of the school year on the basis of medical reports from the last term.
f. All students in a secondary school should present medical examination reports on entering school. These should be screened by the school medical office, and the cases presenting atypical conditions for whom corrective physical education is desirable should be referred to the school's corrective teacher for possible assignment to a corrective class.

QUESTION 4.

Should the instructor of corrective physical education be present at the school medical examinations?

Comments:

a. Although it is not always feasible, the presence of the physical education instructor at the school medical examination is ideal and desirable.
b. If follow-up is to be carried through, the presence of the corrective physical education instructor is necessary at the school medical examinations.
c. The school nurse should work very closely with the corrective physical education instructor during medical examinations and at other times as well.
d. The corrective physical education teacher should interpret his program to the school physician so that the physician can assign the designated students to the proper corrective activities.

QUESTION 5.

Who should have the responsibility of assigning boys to the corrective physical education program?

Comments:

a. The school physician should have the primary responsibility of assigning boys to the corrective program.
b. Final assignment of boys to the corrective physical education program would come from the head of the physical education department, but certainly due consideration should be given to the recommendations of other persons.
c. There should be a joint responsibility in assigning boys to the corrective physical education program. The joint responsibility should be shared by the school physician, the corrective physical education instructor, and the head of the physical education department.
d. The corrective physical education instructor, if he is adequately trained, should have the responsibility of assigning boys to the corrective program.

QUESTION 6.

Assuming a variety of defects among atypical students, what is an average number of boys per corrective physical education class?

Comments:

a. Successful classes in Baltimore range from five to fifteen boys per corrective physical education class.
b. The number of boys in corrective physical education class should be divided into five squads of four boys each. In a 50 minute period, 15 minutes should be given to preparatory exercises, 20 minutes to corrective exercises, and 15 minutes to games.
c. The average number of boys per corrective physical education class should be small in order to allow for more individual attention.
d. The number of boys per corrective physical education class depends upon the type of program anticipated. Too few students lead to self-consciousness and asocial reactions; too many lead to inadequate supervision.

QUESTION 7.

How many periods per week should boys have corrective physical education classes?

Comments:

a. The frequency per week that boys should have corrective physical education classes depends on the type of disability of the boy. Boys should have corrective physical education classes as often as they can benefit from physical education.
b. Boys should have corrective physical education classes as often as other students have physical education classes.

c. Corrective physical education classes five periods per week offer the best opportunity for real assistance and for proper psychological, emotional, and social adaptations to life and should be the minimum requirement. Ten periods per week is better, but this is usually not possible in a public school situation.

QUESTION 8.
Assuming a variety of defects among atypical students, what should be the average length of the corrective physical education class period?

Comments:

a. The length of the corrective physical education class period should be the same length as other physical education classes.
b. The average length of the corrective physical education class period will vary with the nature of the defect of the individual—anywhere from five minutes to an hour or more.
c. The atypical student should be permitted to have certain activities for his specific condition for 20 minutes, then he should be permitted to engage in activities for social benefits. During the war atypical students had only from six to eight minutes of certain activities for their specific conditions with excellent results.
d. The length of the corrective class period should be 30 minutes if the program is purely corrective or purely recreational; up to 50 minutes if several types of activities are included in the same period.

QUESTION 9.
Should any conferences be held with the atypical students before activities are suggested?

Comments:

a. The attitude of the student toward the program is enhanced if conferences are held with atypical students prior to the assignment of activities.
b. The orientation the atypical student receives during the conferences prior to the suggestion of activities is necessary for best results.
c. Good teacher-pupil relationships are established during the conferences scheduled with atypical students prior to the suggestion of activities.

QUESTION 10.
What type of marking should be used in a corrective physical education program?

Comments:

a. The type of marking used in the corrective physical education program should be the same type used in regular physical education classes since these students are no different in their attitudes and interests.
b. The same type of marking should be used in corrective physical education as is used in other classes of the same school on the assumption that a sound marking system is being used.
c. Improvement of the condition of the student and not the grade is the important factor.
d. The type of marking used in a corrective physical education program should usually be the accepted system found throughout the school, adapted to corrective physical education.
e. Atypical students should be told in their initial interview what is expected of them. Grading should be used for motivation.

QUESTION 11.
Are the various therapies (electrotherapy, hydrotherapy, thermotherapy, heliotherapy, etc.) essential in a corrective physical education program?

Comments:

a. Physical medicine in all of the above forms belongs in a hospital or in special schools for the handicapped; not in a regular public school.
b. The therapies listed are not essential in a corrective physical education program nor are they educational. A corrective physical education program should have a strong element of education; the pupil being helped to help himself.
c. It is advisable to refrain from using types of therapies unless one has the proper technical training (physical therapist).
d. Only exercise therapy (corrective exercises) is essential in a corrective program.

QUESTION 12.
Assuming a variety of defects among atypical boys in the corrective physical education program, what should be the minimum dimensions of a room for an average class of 12 boys?

Comments:

a. The average class room space is adequate for a corrective class of 12 boys if the school furniture has been removed.
b. There should be 36 square feet of floor space per boy in a corrective program.
c. One thousand square feet should be the minimum dimensions of a room for an average class of 12 boys. This area would house special equipment. It is assumed that other areas would be available for sports, etc.

d. It would be difficult to specify dimensions, but the regular gymnasium could be utilized for corrective physical education when not in use by other classes.

QUESTION 13.
What types of equipment are necessary to operate a boys' corrective physical education program?

Comments:

a. Apparatus is *not necessary* for corrective work. It merely provides opportunity for variety in the work (increase in complexity, resistance, etc.), has an interest appeal to students, and has motivational value.
b. Equipment is not the main essential for a corrective physical education program; rather trained, interested personnel with community and administrative backing is essential.
c. Excellent corrective work has been done in small rooms with mats as the only equipment. Sometimes strips of rubber from old inner tubes, spools, buttons, and bean-bags were brought from home by the atypical children.
d. Many types of equipment can be made in a school shop, thereby eliminating the immediate demand for large sums of money. Other equipment can be added gradually. The more equipment, the more interesting the program.

QUESTION 14.
What should be the minimum formal education or teacher preparation of corrective physical education instructors in the public secondary schools?

Comments:

a. The minimum formal education of corrective physical education instructors should be a Bachelor's degree with specialization in corrective physical education.
b. The teacher preparation desirable for corrective physical education instructors is a Master's degree with additional special training.
c. The degrees held by the corrective physical education instructor do not determine ability; preparation of the teacher is the most important factor.

QUESTION 15.
In what areas of college preparation should students major or specialize in order to best prepare themselves as corrective physical education teachers?

Comments:

a. Basic college physical education training is not enough preparation for corrective physical education teachers.
b. Prospective corrective teachers should major in physical education with special work in corrective physical education.
c. New York State requires 12 additional hours for certification in the teaching of physically handicapped children. Graduate specialization is advisable for teachers in this field if they desire a more complete understanding of the problem.

QUESTION 16.
What should be the corrective physical education weekly teaching load for instructors who have special classes in this area?

Comments:

a. The corrective physical education weekly teaching load for instructors who have special classes in this area should be approximately three-fourths that carried by other physical education teachers, since the preparation and individual follow-up is usually very heavy.
b. The corrective physical education teaching load for instructors who have special classes in this area should be four classes of 20 students meeting five days per week.
c. The corrective physical education weekly teaching load for instructors who have special classes in this area should be the same as for all teachers, with consideration given for conference time.
d. The corrective physical education teaching load for instructors who have special classes in this area should be six classes a day, five days a week.
e. The corrective physical education weekly teaching load for instructors who have special classes in this area should be the same as the teaching load for other instructors.

QUESTION 17.
Should corrective physical education instructors have duties other than classroom teaching?

Comments:

a. Corrective physical education instructors should have duties other than classroom teaching because it makes them more effective in classroom teaching.
b. Corrective physical education instructors should have duties other than classroom teaching to enable the students to realize that the instructor is a "regular guy."
c. *Some* responsibility other than classroom teach-

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CAMPING FOR THE PHYSICALLY HANDICAPPED

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If the physically handicapped child could live in an environment for general or specific rehabilitation purposes in which the following aspects were present, he would enjoy many factors of an ideal setting: (1) a full time controlled situation without institutionalization; (2) an accepted real living situation with the opportunity of performing many physical activities because of high interest value; (3) possibility of relaxed routines and the opportunity to make adjustments to peers, to adults, to play, to work, to nature, etc.; (4) opportunity for creative, learning experience without the formality of school or clinic; and (5) a chance for exciting adventure.

These factors can be found in the camping situation, although they are not inherent to it and each year more and more physically handicapped individuals are getting the opportunity of living within the structure described. Individuals and social agencies are becoming more aware of the importance of the specialized camping program for the physically handicapped as evidenced by the increased number of camps operated and especially conducted for them. In 1954 the National Society for Crippled Children and Adults listed forty crippled children's resident camps operated by Easter Seal societies in twenty different states, while a listing of resident camps for diabetic children included seventeen camps in twelve states and one in Ontario, Canada. These lists identify only a portion of the camps for the handicapped and are merely indications of the camping that is being carried on.

The camping program for the physically handicapped has largely developed during the last twenty-five years and the organization of the many different camps has assumed various forms. This has been partially due to the philosophies of the organizing agencies and to the availability of funds, personnel, and facilities for a specialized camping program. Basically, however, camps for crippled children and adults are organized with an emphasis primarily on either recreation or therapy. There is no intent at this time to enter into a philosophical discussion of recreation as therapy, for the distinction here is based on primary purpose. If a camper swims only because he enjoys the activity or perhaps desires to learn aquatic skills, he is participating in swimming as a recreational activity. If he swims as prescribed because the swimming will strengthen the extensors of the knee, for example, then the primary objective of the swimming is therapy. One does not necessarily exclude the other completely, for therapeutic changes, both physical and emotional, do take place in recreational activities. The difference, as stated previously, however, is concerned with the primary objective of the camping program.

Recreational Camps

In a resident camp in which the primary purpose is recreation the chief values stressed are those of outdoor recreation and camping skills, group living, and increased social responsibility. Camp Paivika, operated by the Crippled Children's Society of Los Angeles County, California, is organized on this premise and has the following objectives:[1]

1. To provide a rich camping experience for every camper regardless of race, creed or handicapping condition.
2. To present opportunities for our campers to develop social skills which will enrich their lives.
3. To emphasize the spiritual values inherent in an out-of-door setting in joyful living to a group who will appreciate your every effort.

Conclusions from a recent study by the author concerning the recreational interests of 500 handicapped children and adult campers of both sexes indicated the following: (1) there appeared to be little difference in the preferences of campers within a particular age group as related to types of physical disabilities. The campers, regardless of type of handicap, indicated enjoyment of similar activities; (2) the differences in choice of activities seemed to be based more upon levels of maturity than upon physical disabilities; (3) types of activities chosen differed little from those that would be selected by similar aged campers without physical handicaps. Many physical activities were enjoyed because of the modification and adaptation that was made for the individual camper, thus enabling him to participate in a satisfying manner; (4) swimming and horseback riding were enjoyed by the most number of campers. This was true of all groups with the exception of those handicapped with hearing difficulties. No lack

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[1]Board of Director of the Crippled Children' Society of Los Angeles County, *Report of the Operation of Camp Paivika for the Summer of 1952* (Los Angeles: Crippled Children's Society of Los Angeles County, 1952), p. 11.

of interest based on physical disability, however, was ascertained within this group. The high interest in swimming and horseback riding appeared to be founded on two premises: (a) inability of the camper to ride and swim any place other than at camp; and (b) satisfaction found in activities which enabled the person to gain a certain freedom of movement; (5) team game activities were desired mainly by those who were physically able to play them successfully and had participated in the activities prior to coming to camp. However a few who seldom had the opportunity to participate in team games elsewhere, desired them; (6) there appeared to be little difference which could be based on anything other than growth and development factors between the choices of the boys and girls; (7) a camping program for the physically handicapped should attempt to provide regular camping experiences with the necessary adaptations for the disabilities encountered. Every attempt should be made to enable the campers to have as normal a camping experience as possible.

Therapeutic Camps

The program and objective differ markedly, however, in a camp in which the aim is therapy for specific conditions. The emphasis here is on a therapeutic program ". . . which enables a child to maintain continuity of his treatment schedule through the summer, or to secure intensive therapy if he does not have this advantage in his home community."[2] In this type of camp there are generally many recreational activities presented, but a large share of the time is scheduled for therapeutic treatment. An example of this type of program is found at Camp Harmony Hall, Middletown, Pennsylvania, where 700 speech therapy treatments averaging 30 minutes each were given during the 1954 season.[3] This treatment demands qualified personnel, regardless of the type of therapy that is used and also a comparatively longer camping period for the child. This is a budget problem for all camps for the physically handicapped relative to personnel employed and number of campers to be served.

Organization

Camps for the physically handicapped are organized in many different ways whether the primary aim is recreational or therapeutic in nature. There are special camps for individuals with cardiac divergencies, vision difficulties, orthopedic disabilities diabetes, and cerebral palsy. Others, however, are organized to take children with physical handicaps regardless of the type of disability. The fundamental criterion for selection to most all of these specialized camps is that the individual needs a restricted experience and will fare better here than in a camp for persons with "normal disabilities."

The advisability of placing handicapped and non-handicapped campers together is another factor to be considered in the organization of the camp. This concept is being practiced at many boy scout and girl scout camps where the slightly handicapped children participate with the non-handicapped. A few camps, however, have given special emphasis to this integration recently and have had good results. A unique feature of Camp Manitowish at Lake Coeur D'Alene, Idaho, is ". . . the inclusion of non-handicapped children with the handicapped at a ratio of four crippled children to one physically-normal-child."[4] The extent of handicapping condition plays an important role in determining this organizational factor as noted in the prerequisites for this camp. They are ". . . that the child be ambulatory, that he be able to take care of his personal needs, and that he be near the educational equivalent of his chronological age, though he may not be enrolled in school."[5]

The extent of the handicapping condition is noted as a variable in the camping situation for the handicapped as many camps, in contrast to the one previously noted, accept campers who have all of their personal needs cared for by a counselor. Wheel chairs are the rule rather than the exception at others. During the first two week period at Camp Paivika in the summer of 1954, forty-two of the ninety-six campers were in wheel chairs, while many of the others needed assistance to walk. The Pennsylvania Society for Crippled Children and Adults operates two camps for boys and girls between the ages of 8 and 16 who are ambulatory and able to take care of their personal needs, while their camp for younger children accepts wheelchair cases. The campers at all of these camps are only accepted for the full eight week camping season. Camp Wawbeek, operated by the Wisconsin Association for the Disabled, however, accepts campers with degrees of disability from comparatively slight to almost complete helplessness. Staff, facilities, equipment, budget, etc., must be considered in determining the extent of disability of the individual camper.

Campsites

Another factor affecting the organization and pro-

[2]The National Society for Crippled Children and Adults, Inc., *Guide to Standards for Resident Camps for Crippled Children* (Chicago: The National Society for Crippled Children and Adults, Inc., 1954), p. 5.

[3]Pennsylvania Society for Crippled Children and Adults, *Fourteenth Annual Report, 1954* (Harrisburg, Pennsylvania Society for Crippled Children and Adults, 1954) p. 57.

[4]AGNES M. McQUARRIE, "A Camp of Firsts," *Journal of Health, Physical Education, and Recreation*, 24:16, May, 1953.

[5]*Loc. cit.*

gram of the camping program is found in the campsite itself. Kirch[6] has stated that because of the careful planning of buildings and equipment, Camp Wawbeek can accommodate more severely handicapped campers than would otherwise be possible. This means level ground, cement walks for wheelchairs, ramps, special size showers and toilet facilities and numerous other modifications to the regular camp. Camps have been established specifically for the handicapped with this special equipment but some use existing campsites operated by organizations for the non-handicapped. The usual plan is to rent the area for a certain period of time during summer and then to staff and operate it independently of the regular camp. This procedure inherits many problems, for the average camp is geared to long and scenic walks between camp facilities and has much equipment which is not usable by the handicapped. A new concept in community camp planning, reversing normal procedure, is noted in northern California. The Madera County Crippled Children's Society in conjunction with other community agencies has planned a campsite specifically for the handicapped, but it is to be used by the non-handicapped as well. This plan has many advantages in facilitating a camping program for use by all the children in the community.

Still another plan to provide camping opportunities for the exceptional is to schedule one unit of time during the summer season of a regular camp. The summer camp operated by the University of California, Los Angeles, uses this plan in assigning a two week period specifically for children with diabetes. The Los Angeles Metabolic clinic secures the campers and provides medical assistance while the regular camp staff gives the leadership. This plan of operation is advantageous in dealing with children whose limitations are not great such as those with diabetes. They do require special supervision because of diet problems and the need for daily insulin but otherwise they may be as strong and active as normal children.

Another aspect of the camping program for the handicapped which deserves attention is the day camp which can be carried on with considerable less expense and personnel than the resident program. In the day camp the children are taken to the camp, which may be situated in a park or other outdoor area, in the morning and then returned home during the afternoon. This type of camp offers experiences to children who are not able to withstand the intensity of group living in a resident camp situation yet gives them camping activities which can be personally satisfying and socially desirable. Many social agencies operate camps of this type. One example is the Los Angeles County Crippled Children's Society which scheduled eleven different day camps during the summer of 1954 providing for 235 children. Each camp was operated on a ten-day basis with fifteen to thirty-two children attending at one time.

A factor of importance concerning the camping program for the physically handicapped is the expense involved in conducting such a camp. Highly skilled personnel is needed including administrative staff, program specialists, counselors, medical staff, and social workers. The number of campers assigned to each counselor is relatively few and depends to a great extent upon the physical ability and emotional stability of the campers. Adequate personnel and facilities to cope with the physical and emotional problems demands a comparatively high budget indicating that the programs are usually sponsored by agencies rather than individuals.

As stated, the camping program for the physically handiacpped individual is carried on in many different ways. Undoubtedly he needs camp in just the same way and for the same reasons as any child, and possibly his limitations of experience make it more important that he have an opportunity to participate in group living under the guidance of skilled counselors. In referring to children with heart disease Ross[7] states that camp can be more valuable to a physically handicapped child than to a non-handicapped person because it is an environment where an optimistic attitude can be substituted for fears and misconceptions which the child may have about his physical condition.

Summary

From the recreational standpoint, camps for the physically handicapped are organized basically the same as camps for the non-handicapped. The major differences lie in the extent of adaptations that are made to enable the handicapped to participate in camp activities. The interests of the handicapped campers, however, closely parallel those of "normal" children of the same age group.

Camps for therapeutic purposes aim either at continuing the child's existing therapy or at providing an intensive program during the period in which the child attends camp.

Camps may be organized for children with similar disabilities or may provide experiences for campers with different handicapping conditions. Some camps

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[6]PHIL J. KIRCH, "Camp Wawbeek, The Land of the Easter Seal," *Smilin' Through*, 12:17, June, 1950.

[7]LUCILLE J. ROSS, "A Summer Camp for Children with Heart Disease," *Journal of Pediatrics*, 43:72, July, 1953.

A CONTRIBUTION OF CORRECTIVE THERAPY TO NURSING EDUCATION

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Training in proper lifting procedures and methods of handling patients is necessary in many hospitals because of the large number of seriously disabled patients found in these installations. Some three years ago at the request of the nursing service, the corrective therapy section of this hospital planned and initiated a class in "Lifting Procedures and Body Mechanics Applied to Patient Handling." Because of the therapists' training in applied body mechanics and kinesiology, and extensive experience in teaching functional exercise and daily activities to all types of patients, it was suggested that they conduct this course. This training has proven successful and has become a regularly scheduled class in the education and training program of the nursing service. It is given to all ward attendants during their indoctrination program, to all nurses, as part of their in-service training, and to visiting student nurses during their orientation and field trips to the hospital.

Training in these activities is necessary at this hospital for several reasons. Since this general medical and surgical hospital has an extensive cord injury service, a large number of seriously disabled patients must be handled daily. All ward personnel must know the safest and easiest methods of assisting and/or lifting the paraplegics, quadriplegics and hemiplegics so as to prevent injury not only to the patient but to themselves. It also serves as an indoctrination to the philosophy of the physical medicine and corrective therapy programs that the patients should help themselves as much as possible, and to show that there are many of the daily activities that the patients can do unassisted or with only minimal assistance. Finally, it serves to emphasize the fact that back strain is one of the most prevalent types of injury occurring in hospitals and to focus the attention of all personnel toward the prevention of this type of injury.

The material presented is divided into two major categories. The first few minutes of the period are spent in a review of the basic lifting principles. Included in this review is lifting posture, balance, proper use of the legs and back, and positioning of the weight to be moved or lifted. During the remainder of the class the methods of lifting and assisting the three major types of disabled patients are presented.

While it is not the purpose of this paper to describe the methods taught, a brief outline of the activities presented follows. It is felt that any such class should include these basic activities:

A. *Handling hemiplegic patients*
   1. Proper positioning of wheelchair
   2. Standing from, and sitting in the wheelchair
   3. Moving into and out of bed
   4. Shifting position in the bed

B. *Handling paraplegic patients*
   1. Brief discussion of all bed, wheelchair and self-care activities that patient can accomplish himself
   2. How to "spot" and assist the patient in such activities as moving from bed to wheelchair, wheelchair to toilet seat, and wheelchair to bed

C. *Handling quadriplegic patients*
   1. Shifting patients' position in bed
   2. Turning onto the side
   3. Sitting on the edge of the bed
   4. Shifting patients' position in the wheelchair
   5. Lifting from bed to wheelchair and wheelchair to bed

Because of the severe nature of the disability emphasis is placed on the procedures for handling the quadriplegic patients. Considerable discussion centers on the necessity for proper handling in the prevention of pressure ulcers and injury, which supplements previous instruction in this topic received during the training period. However, when class instruction is given to visiting groups or to nurses from other than the paraplegic wards, the emphasis shifts to the procedures for handling the hemiplegic and general medical and surgical patients, since it is with this type of patient that the personnel in a general hospital are usually concerned.

The method of presentation is both theoretical and practical. The instructor first explains and demonstrates the activity; then each student in the class actually practices the activity. One of the class members takes the role of the patient rather than using the life-size mannikin, as this gives the students an opportunity to handle the weight of an actual person.

Throughout the demonstration of each activity

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the application of the basic lifting principles to the handling of patients is shown and explained. The relation of the student's posture and the body mechanics involved in the particular activity are described. It is explained that the methods shown may not be the only methods for accomplishing a certain activity but that experience has proved them generally to be the safest and easiest to perform and they are taught as basic techniques which may be adapted or modified as necessary. The classes are informal, with questions and discussions by the students encouraged. Follow-up instruction on the ward has been provided when required. All nurses and attendants are informed that the corective therapists working on the wards are available to assist in working out techniques for handling patients who present a particular problem such as extreme spasms, flaccidity, multiple severe contractures or obesity. On occasion, the ward personnel have attended a clinic designed to show methods of handling a particular patient on the ward. These clinics are conducted by the therapist who has been treating the patient.

The initial classes proved of such value that they are now scheduled regularly as part of the training program for ward attendants and are included periodically in the in-service training program for the nursing service. The ward personnel now have a better understanding of the necessity of preventing injury, not only to the patient but to themselves and can relate the basic lifting procedures to their ward activities. Since the personnel have an insight into the methods and techniques used in handling the various types of patients, they have more confidence in their own ability when they first start work with patients on the ward. The nursing staff is better able to supervise and correct the techniques used by the attendants and to assist in the movement of a patient when necessary.

Several groups of student nurses visiting the hospital on field trips have been given instruction in this class. It has been enthusiastically received by the students and school instructors and has given them a practical understanding of patient handling which they have been able to apply to their daily work routines.

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ing helps the corrective teacher keep attuned to school life as a whole and makes him more sympathetic with pupils. However, this should not be as extensive as the responsibility involved in coaching interscholastic sports.

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include programs for both the handicapped and non-handicapped children.

The extent of handicap is a major factor to be considered in the organization of a camp. The campsite is also an important factor and should be planned specifically for the handicapped wherever possible.

Day camps have proved satisfactory in many cases where children have been unable to take advantage of the resident program. The day camp is also frequently used as a first step to resident camping. Because of the high overhead, most camps for the handicapped are operated by agencies rather than individuals. The yearly increase of these specialized camps, however, indicates the value of camping in the life of the handicapped.

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One hundred sixty-five male marathon runners were studied. The average age was 28 years, height 68 inches, weight 142 lbs. Approximately 1% of the body weight was lost for each five miles run. In three runners the blood pressure averaged 126/75 before the race and 90/60 after the race. The pulse rate averaged 57 beats per minute before the race and 91 after the race. Five subjects had muscle cramps soon after they stopped running; this may have been due to low blood chloride. Electrocardiograms were characteristic of ventricular hypertrophy without evidence of cardiac disease. Radiologically, the heart was enlarged in its broad, long and transverse diameters before the race and considerably smaller immediately after running. The recognition of this picture and its relation to previous physical training is important in the differential diagnosis of cardiac enlargement.

PJR

LOUIS N. KATZ, "What Stress Does to the Heart," *Industrial Medicine and Surgery*, 23:267-269, June, 1954.

Stress is any force which puts a load on the heart. The heart has four means by which it can adjust to stress: it can speed up the number of beats; it can dilate; it can hypertrophy; it can alter its contractile power. Cardiac reserve is the amount of increase in these factors that the heart can summon to meet an increased stress. The diseased heart is not different from the normal heart in its response to stress except that its reserves are lower. Work is a normal state. It cannot cause coronary disease, hypertension or rheumatic heart disease. There is no substance to the fiction that work can lead to any type of heart disease. Work can aggravate symptoms of heart disease already present. An employee who develops a heart attack while at work cannot be considered to have developed it because of work unless it can be shown that he was subjected to an excessive stress not ordinarily sustained on the job.

PJR

JAMES P. CAMPBELL, "Pool Therapy," *The British Journal of Physical Medicine*, 17:224-227, October, 1954.

The value of pool therapy is based largely on the active efforts of the patient when supported in whole or in part by water. Exercising in water produces a general tonic effect on the circulation. Heat is applied to the whole surface of the body and can be regulated accurately in time and in degree. The massage effect of the water stimulates the return flow of blood and lymph from the lower extremities to the right side of the heart. Swelling of the ankles and feet commonly found in patients when they commence to get up after prolonged recumbency is avoided by pool therapy and by re-education in walking in the pool before commencing walking in the gymnasium. Anti-gravity movements are made much easier. The tactile and visual appreciation of movement and position are particularly important in re-education in walking. Exercise in water can be graded much more finely than in the gymnasium; this gives pool therapy an important place in the early stages of muscle development. Patients with contagious and skin affections must be excluded as well as those with discharging sinuses and certain cases of poliomyelitis with extensive respiratory weakness.

PJR

HANS KRAUS and RUTH P. HIRSCHLAND, "Minimum Muscular Fitness Tests in School Children", *The Research Quarterly* 25:2:178-188, May 1954.

Six tests, involving strength and flexibility of trunk and leg muscles, were given to low back pain sufferers and also to school children. Of more than 4000 patients reporting to low back clinics approximately 80 percent were free of organic disease. This group however failed one or more of the six tests. After receiving therapeutic exercises they improved as their test results improved. In an 8-year follow-up it was found as patients stopped exercising,, their tests failed and complaints reappeared. This condition could be reversed by resuming exercise. When the individual is prevented from ridding himself of surplus energies, tension remains often resulting in physical discomfort. Prevention might well be found in an increase of physical activity.

When the six tests were applied to 4264 American school children it was found that a high percentage (54.9%) failed while in a subsequent study of 2870 European school children a relative low percentage (8.7%) failed the tests. The poor American showing can be attributed to a high degress of mechanization which requires little physical activity. The authors urge that the tests be given at regular intervals and the scores be made part of the child's complete school record.

JT

EDWARD B. SHIRES, JOSEPH J. PETERS AND ROBERT M. KROUT, "Hypnosis in Neuromuscular Re-Education," *United States Armed Forces Medical Journal*, V:1519-1523, October, 1954.

The authors are apparently the first ones in recorded history to report the advantages of the use of hypnosis in neuromuscular re-education. They are using a hypothesis that in the first years of life voluntary muscles may be bilaterally innervated whereas it is only later that the contralaterial corticospinal tracts take over the voluntary function. When the contralateral fibers are interrupted, as in hemiplegia, it is proposed to regain motion by establishing function of the inactive ipsilateral tracts. To accomplish this, the subject has to be regressed to an early age through the use of hypnosis. The subject was a 30 years old left handed female patient with tuberculosis. On January 31 1952, a left upper lobectomy was performed. On February 11 patient suddenly became a left flaccid hemiplegic probably due to cerebral embolus. Because improvement was not noted in a two weeks exercise program hypnosis was added to this program. Through hypnosis she was regressed to the age of four years. Upon awakening from a trance she said that all four extremities moved in her dream. After having received nine exercise sessions under hypnosis in three weeks time she was placed on her own for doing her daily exercises. In April of the same year she could ambulate with the use of a cane and drop foot brace. In February, 1953, she could walk with a slight but typical hemiplegic gait and does it also without drop foot brace. According to the authors the recovery was more complete and more rapid with the use of hypnosis than with physical methods alone.

JT

"Why do People Detour to Quacks?" *The Psychiatric Bulletin*, IV:66-69, Summer, 1954.

Who detours to quacks for treatment of cancer and why? An analysis of the psychological factors involved indicates that there are four categories of patients who seek non-medical treatment: The miracle seeker, in search of a sure-cure overnight; the uninformed, who are unaware of differences in practitioners; the restless, who become impatient with medical care; the straw-graspers, who are willing to try anything after orthodox medicine has failed to cure them. The astonishing loyalty of patients to quacks seems to result from the latter's positive approach, kindness, consideration and recognition of the patient as a person. To this may be added biased logic and religious faith. The physician must furnish not only adequate medical care but sympathetic emotional support if he is to prevent patients from detouring to a quack.

PJR

ROBERT PLANK, "The Reproduction of Psychosis in Science Fiction," *International Record of Medicine and General Practice Clinics*, 167: 407-4.1, July, 1954.

Science fiction is chiefly an American development. Motifs found with paramount frequency include space travel, removal from communion with the living, and influencing machines. Episodes of space travel are frequent in the imaginings of the mentally ill. The feeling of isolation from the world is a familiar one in schizophrenia. The content of delusions of influencing machines among psychotics has become more similar to science fiction, while it used to be more similar to religious concept. Similarly, manifestations of our culture have become more similar to manifestations of psychosis. Science fiction is merely one of these manifestations, but it is a remarkable and sensitive barometer of our changing mental climate. It is likely that the relationship of a creative writer to his literary productions is in the nature of abreaction. Abreacting this potentially psychotic material through writing and reading those stories deprives it of its virulence. The emergence of science fiction as a major literary genre implies that material of this sort is free-floating in our culture and needs to be abreacted in this way. Its manifestations appear as symptoms of growing discomfort in an increasing technical civilization.

PJR

C. E. QUIN AND F. A. BINKS, "Tennis Elbow," *The Lancet*, 6831:223-225, July 31, 1954.

Tennis elbow (epicondylitis humeri) is a long-continued, painful condition of the lateral side of the elbow, accompanied by local tenderness and often by swelling. The pain may be referred up or down the arm, particularly down the radial border to the thumb. Symptoms are greatest when a heavy object is held at arm's length and the forearm pronated and supinated. Normally spontaneous recovery occurs in a year or two and recurrence is rare. Twenty-one different lesions have been held responsible for the symptoms. The most commonly accepted explanation is that a tear occurs at the junction of the extensor tendons and the bone. Rest and physiotherapy methods have been used with indifferent success. Manipulation produces relief in some cases. Operative treatment has proved successful in a high proportion of cases. Satisfactory results have been achieved by injecting a suspension of hydrocortisone acetate. Subsequent relapse is common, but this usually responds to a further injection.

PJR

RALPH W. MACY, "Swimmers Itch," *Office of Naval Research, Research Reviews*, pp 13-17, November, 1954.

"Swimmer's Itch" is a common malady caused as a result of penetration of the skin by a minute larval worm belonging to a group of parasites known as blood flukes, or schistosomes. In an Oregon variety, the adult worms normally live in the smallest veins of the intestinal wall of ducks. Eggs from the worms hatch into miracidium which lodge in snails. The snails shed penetrating larvae, contact with which infects ducks and causes the itch on human skin.

PJR

L. J. MACQUEEN, "Recent Advances in the Technique of Progressive Resistance Exercise," *British Medical Journal*, 4898:1193-1197, November 20, 1954.

The object of this paper is to describe the regimen for producing muscle hypertrophy and that for producing muscle power, a distinction not usually made in medical literature, and to consider their application. The hypertrophy program is done in sets, the weight not being put down until completion of a certain number of sets. The weight used is that which can be handled for the stated number of repetitions. Body builders usually exercise three times a week. Frequent change in the exercise routine is necessary to prevent boredom and insure continued progress. The power program is essentially one of decreasing numbers of repetitions performed with increasing weights. Five days of exercise a week are not uncommon. Both the hypertrophy and the power programs have important refinements of technique and new experimental schedules are being developed.

PJR

ARTHUR B. OTIS, "The Work of Breathing," *Physiological Reviews*, 34:449-458, July. 1954.

The cost of resting breathing has been estimated to be about 0.5 ml $^{0}_{2}$ per liter of ventilation. This low efficiency means that most of the energy developed by the breathing muscles appears in the form of heat. Both at rest and in exercise the body chooses a frequency of breathing requiring minimal work. In muscular exercise ventilation is usually found to bear an approximately linear relationship to the $^{0}_{2}$ consumption. Part of this ventilation represents the requirements of the muscles of breathing. The higher the ventilation the smaller the proportion of total $^{0}_{2}$ available for "useful" work. No studies have been made on the effect of body size on the work of breathing. In some diseases it may be greatly increased.

PJR

MacARTHUR'S CREDO

I promise to keep on living as though I expected to live forever. That famous barrack-room ballad apparently counts on us, those old soldiers who have escaped the carnage of the battlefield, to find the fountain of youth. And, indeed, we might if we only understood what the poet said, that youth is not entirely a time of life — it is a state of mind. It is not wholly a matter of ripe cheeks, red lips or supple knees. It is a temper of the will, a quality of the imagination, a vigor of the emotions, a freshness of the deep springs of life. It means a temperamental predominance of courage over timidity, of an appetite for adventure over love of ease. Nobody grows old by merely living a number of years. People grow old only by deserting their ideals. Years may wrinkle the skin, but to give up interest wrinkles the soul. Worry, doubt, self-distrust, fear and despair — these are the long, long years that bow the head and turn the growing spirit back to dust. Whatever your years, there is in every being's heart the love of wonder, the undaunting challenge of events, the unfailing childlike appetite for what next, and the joy and the game of life. You are as young as your faith, as old as your doubt, as young as your self-confidence, as old as your fear; as young as your hope, as old as your despair. In the central place of every heart there is a recording chamber; so long as it receives messages of beauty, hope, cheer and courage, so long are you young. When the wires are all down and your heart is covered with the snows of pessimism and the ice of cynicism, then, and then only are you grown old — and then indeed, as the ballad says, you just fade away. **From an address at the dedication of a monument to General MacArthur in MacArthur Park, Los Angeles, Jan. 26, 1955.**

Editorials

THE SUB-TOTAL ASPECTS OF REHABILITATION

The development of a philosophy of rehabilitation in America has quite logically emphasized the total aspects of the process. We are aware that the end results involve both optimum independence and productive employment and that these results are contingent upon a cooperative solution of medical, functional, social, psychological, economic, and vocational factors which must *all* interact in a manner favorable to the patient's total rehabilitation. The establishment of this criteria has promoted the concept of the "team" approach to total rehabilitation and the establishment of separate departments of rehabilitation in many progressive hospitals and the burgeoning of independent centers for the exclusive purpose of providing total rehabilitation facilities for the handicapped and disabled in many communities.

Although the total aspects of rehabilitation unquestionably deserve the wide recognition accorded them in recent years, it should be borne in mind that rehabilitation potential is not the same for all patients nor even for any particular category of disability or handicap and that many of the factors enumerated above may preclude the possibility of total rehabilitation.

Particularly is this true of the so-called "aged, infirm" or "chronically ill" patients who, collectively form one of the most difficult of medical-administrative and management problems in the general hospital. Being staffed to afford maximum facilities for patients requiring treatment of acute medical and surgical cases, the general hospital's objectives and efficiency may be seriously impaired when a disproportionate number of its beds become occupied by long term patients.

It is thus encouraging to read of new projects designed to provide maximum efficiency for the general hospital and at the same time, to provide methods whereby responsibilities to the long term patient can be met with the greatest efficiency. One such project is the pilot program undertaken by the Veterans Administration to study how the problem of the chronically ill can be met through an intermediate hospital or unit. Such a unit is designed to concentrate on chronic, infirm patients who require medical supervision together with routine nursing care but do not require the attention typical of the general hospital. The program is not to be confused with that of the domiciliary which is the agency's primary facility for custodial care of the long term patient.

From a practical standpoint, the V.A. has stated that the new program "could become of inestimable value in the future when the number of chronically ill and aged patients may be expected to increase." From the standpoint of economics, the per diem cost of the "intermediate case" is expected to be appreciably reduced from that of the average patient in the general hospital.

Should the intermediate hospital concept win general acceptance a concommitant urgent need for "subtotal rehabilitation" will no doubt become apparent. With aged, infirm, predominantly bed-ridden patients grouped within one unit, the need for medically directed therapeutic programs of self-care, improvement of functional use of the body, programs for socialization and emotional release will be required if the general health level of this type of patient is to be raised. In such a situation it is evident that the training, ability, personality, and leadership qualities of the corrective therapist can be of inestimable value.

SUPPORT YOUR CONVENTION

It is highly fallacious to think of the annual convention of the Association for Physical and Mental Rehabilitation as a sectional affair. To represent the highest ideals of the organization and to reflect its national character, it is imperative that as many members as possible from all areas of the country arrange to assemble in Boston during the last week in June.

A varied and informative program of scientific and educational sessions has been ably planned and every effort is being made to make the Boston meeting a memorable one. In addition to the convention itself, an outstanding opportunity is offered the visitor to this great New England city which abounds in history and tradition as well as providing for outstanding facilities for amusement, dining, sporting events, shopping and sight-seeing.

For persons who like to combine the convention with their summer vacations, Boston is an ideal spot from which to start out on a visit to the rocky coast of Maine or to the sun-drenched beaches of the famous Cape, either of which can be reached in a morning's drive.

Even if you cannot make the convention this year, your President has outlined a variety of methods whereby you can make some contribution to the meeting this year. Your cooperation will aid appreciably in lightening the burden on those who are striving to make the meeting a success.

Book Reviews

"Basic Physiology of Exercise," by Ferd John Lipovetiz. (Minneapolis: Burgess Publishing Co., 1954. 170 pp. $5.00).

This is a companion text to Lipovetz's *Basic Kinesiology* (reviewed in the November-December 1953 JOURNAL) and is presented in the same style of type and rather inconvenient size. The first half of the book is basically an outline of the neuromuscular functions. Readers will note statements which differ from the opinions expressed by other authorities in the field. For instance, the value of treppe as a product of warming-up has been discounted by Morehouse on the basis that in vivo it occurs too rapidly to result from the warming-up process. The importance of carbon dioxide in the increased breathing of exercise has been doubted by Morehouse and Miller. It is difficult to accept the explanation of tonus as "an involuntary contraction of a certain number of fibers in a muscle" in view of the fact that relaxed muscles are electrically silent. One wonders what evidence justifies the statements that smoking retards balanced emotional and mental development and has a dangerous effect on mental attitudes. The second half of the text deals with exercise in physical education and athletics. Much of it is drawn from the author's own researches and presents several points of interest. The book would be considerably improved by a more extensive bibliography. Only 44 items are listed under "Bibliography and Contributors" and practically no periodical literature is cited. It is aggravating to read "Recent University of Iowa experiments indicate . . . " with no reference to the literature describing the studies. The book is interesting and well written and presents some new idas, but will not replace Morehouse and Miller or Karpovich in the library of the corrective therapist.

PJR

"Healthier Living," by Justus J. Schifferes (New York: John Wiley & Sons, Inc., 1954, 928 pp. $6.75).

In writing this as a text for college hygiene courses, the author states that he sees "the aim of modern health education as that of inspiring a course of human conduct illuminated by an understanding of the structure and function of the human body." While such chapters as "How to Develop a Satisfying Personal Philosophy" may be surprising to some teachers of hygiene, they are quite consistent with his thesis. The book is divided into five parts: Introduction and Orientation, Education for Family Living, Mental Health, Personal Health, and Community Health. Most chapters are followed by an annotated bibliography and questions for discussion and review. The author possesses an unusual ability to make the student want to read the references which he describes. The material within the chapters is covered with encyclopedia-like thoroughness. There is, for instance, a chapter on the Protestant view of Sex and Religion and another on the Roman Catholic and Jewish standpoints. Many psychoanalytical concepts are employed occasionally resulting in some obscure language: "The part of the id which is modified to make safe conduct for the id through the jungles of external reality is the ego." At times some of the generalizations seem hasty. The author comments that Eskimos have a protein diet and seldom live to be sixty. One wonders whether other environmental factors may not be of importance in determining longevity, and how that of the Eskimos compares with the vegetarians of India. One also wonders whether there is any such thing as a boy "burning himself out" in athletics. The whole book woould profit by tighter writing. For instance the paragraphs on "Taking the Mystery Out of Medical Practice" add nothing but length to a text whose 928 pages will daunt even the stoutest student. The type is large and clear, the material is interestingly presented, and seems to cover practically every phase of health in a detailed manner.

PJR

"Human Physiology and Its Applications," by Harrison M. Tietz. Revised Edition. (Minneapolis: Burgess Publishing Company, 1955. 225 pp. $4.25). Paper, spiral bound.

In style this is more similar to a dictionary or encyclopedia than to the average textbook. In most instances an anatomical or physiological term is given and then defined or described. In some cases this makes for an apparent lack of connection between two successive paragraphs, but each is related to the subject which is the topic of the chapter. The reviewer is not sure how satisfactory such a text would be as a teaching manual, but it seems useful and handy for review or reference work on the college level. A feature of interest to corrective therapists is that much more attention is given to diseases and abnormal conditions than is found in the average book of this type. It is noted that "Charley Horse" is defined as a muscle tear, whereas among athletes and trainers this term generally indicates a bone-muscle bruise. Also it would seem well to include convection among the ways the body loses its heat since Selle points out that this is an important factor in swimming. The text is clearly written and is well illustrated with drawings but possesses no bibliographic entries. It is printed in offset type and, of course, possesses the disadvantages characteristic of all spiral bound books. The book is recommended to therapists having use for a convenient "refresher" on physiology; it should prove well suited to their needs.

PJR

"Transference, Its Meaning and Function in Psychoanalytic Therapy," by Benjamin Wolstein. (New York: Grune and Stratton, 1954).

The author submits that Freud did his original thinking in the authoritarian terms of the hypnotist and this approach remained basic to the rest of Freud's work. Transference then became the irrational response to the authoritarian analyst by the patient, the development and resolution of which comprised the analytic work. The analyst ideally was to remain emotionally uninvolved and mirror-like. Dr. Wolstein makes a markedly erudite plea for the "Interpersonal" school of thought largely promulgated by Harry Stack Sullivan. In general, the approach seems more humanistic, considering the analyst as a real person in a real relationship with the patient. We would refer not to the "resistance" but to the patient's "security operations," the latter term pointing up that the patient relates as he does in his efforts to avoid anxiety. Throughout the book there is emphasis on an operational terminology, the use of words that attempt to say what the process is. This is most elaborated in the discussions of syntaxic versus parataxic distortions. The latter part of the book continues to develop the great meaningfulness of the actual human therapist-patient relationship. Further, this is a process with social implications: "Psychoanalysis does not exist in a social and scientific vacuum." The author seems to indicate an important humility about the analyst and his work. He says there never has been a comprehensive theory of all human behavior and the number of variables make it doubtful that one will exist. I think all these ideas are salubrious and helpful. They tend to dispel many of the mystic vapors of the earlier authoritarian constructs. I am not convinced that it is important to learn to understand all of Dr. Wolstein's terminology, but I feel that his ideas all merit study.

RVF

"Athletic Build Analyzer and Your Athletic Build Rating." (Chicago: Athletic Laboratories, 1954. 5 charts. $1.00).

These are charts which purport to indicate ability for baseball or football by observation of various anthropometric features of the body, such as the shape of the back of the head seen from the top, the shape of the back of the head seen from the side, head contour, protrusion of motor horns angle of hand to the forearm, etc. In view of the lack of any statistical demonstration that such factors are of any importance in determining athletic abilities the charts can only be regarded as curiosities.

PJR

"The Sexual Offender and His Offenses," by Benjamin Karpman, M.D., (New York: The Julian Press, 1954. 747 pp. $10.00).

Seldom has medical literature been so enriched by a scholarly contribution such as this. The meticulous and exhaustive presentation of a subject that is as controversial and little understood as sexual abnormality unquestionably stamps this work as a medical classic. Within the confines of a single moderate-size volume the author has managed to discuss all aspects of sexual aberrations with the inclusion of a great deal of case material. He has offered here a further development of his detailed method of presentation, which is so effectively carried out in some of his previous publications, such as:: "Case Studies in the Psychopathology of Crime" (4 volumes), "The Individual Criminal" and "The Alcoholic Woman".

Although the sub-title indicates that the book covers "etiology, pathology, psychodynamics and treatment,," this reviewer feels that it could also just as well include "diagnosis prognosis and prevention." The broad and inclusive approach of the author leaves little to be desired. For the most part he displays a fine rhetorical style (probably the result of his many years of teaching, lecturing and writing) with a sufficient dash of colloquialism, vernacular and humor here and there to make for easy reading.

The work is divided into two sections. The first contains a review of the literature from 1912 to 1951. Dr. Karpman has uniquely and masterfully abstracted the essentials from each of the references listed in the lengthy bibliography and has organized the material into chapters, presenting in logical sequence such topics as: definitions and descriptions of the sex offender, types and classifications of sexual offenses, medico-legal aspects, treatment and prevention, etc. In the second section, "Psychobodynamics of Sexual Offenses and A Formulation of the Problem", he presents his own views on the subject based on his personal clinical experiences, as well as the psychobiological background developed in the course of over thirty years of work in psychoanalysis. Each chapter in both sections concludes with a summary of the presented topic. At the end of the work we find a topical synopsis, which is intended as a grand summary of the entire book, a well-annotated and extensive bibliography a psychogenic inventory, detailed author and subject indexes and, lastly, an appendix containing two useful charts. One chart diagrammatically represents the paraphilias and the subdivisions of each. The other chart gives a practical psychiatric classification of the neuroses and psychoses, their relationship, and how they, in turn, are related to the paraphilias and psychopathies. The psychogenic inventory provides a useful psychiatric evaluation instrument in those situations where the questionnaire method is substituted for or is combined with the couch and/or interview method.

The author subscribes to the "original Freudian approach" because, he states, that "the strictly analytical biological approach" was more effective than any other he has tried. This point of view has been well represented by Dr. Karpman.

Through the many cases cited he offers psychotherapy as the chief modality in the treatment of many of the conditions, as for example, homosexuality, described herein. If we consider psychotherapy in its broad connotation, then it would, of course, include, in addition to the formal and specific methods of treatment practised by the author, the psychotherapeutic effects of a comprehensive program of activity or milieu therapy, both verbal and non-verbal, as provided through the media of the corrective therapy and other adjunctive therapy sections of the Physical Medicine and Rehabilitation Service in the Veterans Administration. Perhaps some would prefer to call it psychological therapy; but in any case, it provides the psychiatrist with evaluative data that he can utilize for more specific psychotherapy in order to re-direct the patient's behavior into more acceptable social channels. It is precisely as a result of such therapeutic activity that the Veterans Administration has succeeded in materially reducing the number of restraint hours and the use of tubs and packs, as well as tranquillizing drugs in its hospitals. The psychodynamic approach of modern psychiatric practice, demonstrated in this book, can be well implemented by the active participation of the patient in resocialization activities that motivate him to accept and desire complete rehabilitation.

In a treatise of this magnitude one may reasonably expect at least a few differences of opinion between author and reader. On a few occasions Dr. Karpman mentions the work of Thompson to illustrate the ineffectiveness of electroshock as a therapeutic measure. Since Thompson's article was based on a study of only six patients, one should reserve final judgment in the matter until data from an adequate series of patients were available.

Because of his vast experience and interest in psychoanalysis and psychotherapy, the little value the author places on hormone therapy for the paraphiliacs is understandable. However, one wonders whether a psychiatrist who is not so oriented might not be at least a bit more catabolic in his attitude toward this form of treatment.

While one may admire Dr. Karpman's intellectual honesty and fortitude in attemptiing to justify his designation of "The Normal Pervert", I believe that in presenting this "new" type of paraphiliac he probably has become the unwitting victim of a bit of adroit paralogism. In the chapter on this subject he cites that one of the criteria of the normal pervert is that he is a "useful and entirely honorable member of the community". If through some mischance, perhaps, such an individual gets into the toils of the law, he is then, no longer "normal". This reviewer cannot subscribe to a thesis which depends on a police blotter or court record as the determinant of normalcy.

Certainly the few unorthodox and controversial ideas expressed by Dr. Karpman do not detract from the value of this book. Some may even rightfully claim that its value is enhanced thereby. It offers a completely satisfying experience to readers with diverse tastes and opinions as to how a medical subject with clinical and legal implications and applications should be presented. It will have particular appeal for those who demand thoroughness and near-perfection from the author in the scope of his presentation as well as in the format of a book, which, from the practical standpoint, can serve as a source of reference or study for all those professionally interested in or concerned with the problem of sexual abnormality.

FJB

Understanding the Japanese Mind by James Clark Maloney. (New York: Philosophical Library, 252 pp. $6.00).

In this one world which is constantly shrinking, it is vital for us to understand our ever-closer neighbors. The Oriental mind always has been "a mystery wrapped in an enigma." The author intends to help us understand the Japanese by reviewing their history and culture. It is of interest to read that St. Francis Xavier established the first mission in Japan, located at Nagasaki, which to most of us is known only from atomic bomb attack. In 1567 nearly all citizens of that town were Christians with a church numbering an estimated 600,000 communicants. Various intrigues brought about a reaction and in 1629 there were none who acknowledged the Christian belief.

It seems but yesterday that Commodore Matthew Perry in 1853 forced open the door of Japan in a "sneak attack" upon Tokyo Harbor, somewhat resembling the Japanese tactics at Pearl Harbor, thus thrusting the civilization of the West upon Japan. Japan adopted western culture speedily, at least outwardly; its cultural pattern, however, remained essentially unchanged. Filial respect and conformity are foisted upon the Japanese while still an infant. The mother pushes the head of the infant into a bow as the father enters the room. He may be taught discipline by subjecting him to the burning of dry leaves on his skin. The Japanese, even when insane, conform to authority. The Japanese Mental Hospitals have no special facilities for confining of disturbed patients. The most violent live together in homes that are separated by insecure rice paper partitions opening into larger quarters. The windows are glass of ordinary thickness.

Freudian psychoanaysis is practised for the most part in countries with a culture quite similar to that of its origin. Japan and India constitute two possible exceptions. Do the Japanese integrate or merely copy western psychoanalysis? The author fears that the Japanese facility to copy and their compulsive need to imitate exactly the product of western nations, must be taken into consideration if we wish to understand the status of psychoanalysis in present-day Japan.

EF

"The Book of Arts and Crafts," by Marguerite Ickis and Reba Selden Esh (New York: Association Press, 1954, 265 pp. $4.95).

The clarity of Miss Ickis' text is belied by the inadequate illustrative material.

In the light of the several treatises written on the subject of crafts this volume emerges as a not unusual contribution.

The material is in general aimed at the inexperienced craft worker and applies to use in the home, camp and playground. A wide variety of craft media is discussed with special emphasis on use of natural and scrap material. Because of its general nature this book would undoubtedly be of assistance to school teachers, recreation leaders, church and club groups as well as individuals who are seeking new material.

IF

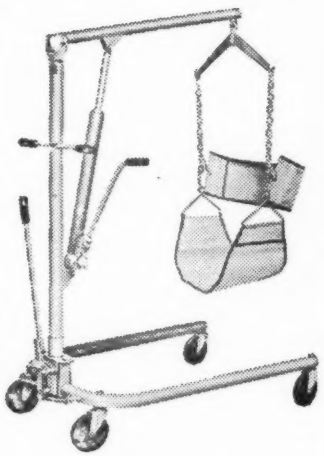
"Physical Education Activities for the Elementary School," by Jeanette Smalley (Millbrae: The National Press, 1950, 199 pp. spiral-bound, $2.50).

Miss Smalley has collected scores of games, from tag to basketball, and has classified them as to their suitability for use with pupils of grades one through six. Rules and helpful suggestions as to techniques of play and of conducting the activity are given. For the more complicated sports, graded lead-up games are described. Diagrams and sketches illustrate doubtful points. Chapters are devoted to stunts, relays and rhythmics. Blank pages are provided after each section for personal notes. The final chapter consists of a thought-provoking questionnaire on "How to Organize Physical Education." The author has produced a manual which does an excellent job of meeting its objectives. It is unhesitatingly recommended to anyone needing a handy source of material to aid him in selecting and leading simple athletic activities.

PJR

The HOYER *Patient*

LIFTER



An all-purpose hydraulic transfer for the wheelchair-bound

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Oshkosh, Wisconsin

"Workmen's Compensation," by Herman Miles Somers, and Anne Ramsey Somers. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1954. 341 pp. $6.50).

The authors, in this comprehensive treatise on matters concerning the complicated structure of our social insurance system, fill a long-felt need in this area. Their approach to the study and consideration of this massive segment of our socio-economic system is tempered by a social philosophy too often lacking in works concerning this subject. Wide coverage is given all aspects of workmen's compensation as it affects workers at several industrial levels. Matters of administration law, labor economics, insurance and medical practice are covered so thoroughly and concisely that each might well comprise a handbook in itself. In a section devoted to prevention and safety the authors appraise the reader of conditions in this area of our system and also present concepts of their own that the reviewer feels would greatly improve present conditions. Private, public or federal agencies would do well to consider this volume as a standard source of reference.

IF

"The Concept of Schizophrenia," by W. F. McAuley (New York: Philosophical Library, 1954. 145 pp. $3.75).

The author begins his text with an historical survey of the recognition and dynamic concept of schizophrenia. He concludes that heredity is of much less importance than environmental stress, and that schizophrenia represents a faulty adaptation to the environment, particularly within the family. The evidence for physiological origins for the disease is briefly presented, and the difficulties of proving these theses are discussed. The problem of diagnosis is given a chapter, followed by a short and very unsatisfactory chapter on treatment, with insulin indicated as the method of choice. Those entering upon N.P. work will find that the first four chapters provide a pleasant but elementary and oversimplified introduction to the subject. For the physiological factors involved one should consult Altschule (reviewed in this *Journal* July-August, 1954.) Practically any standard modern text on the subject offers a better discussion of diagnosis and treatment. To the therapist already experienced in the field the book has little to offer.

PJR

"The Deaf and Their Problems," by Kenneth W. Hodgson. (New York: Philosophical Library, 1954. 364 pp. $6.00).

This book is primarily directed towards the teacher or those people who are associated with the deaf. It contains one section that is completely devoted to the mechanical aspects and an analysis of the process of hearing. Included in this section are the various etiological factors resulting in deafness. The second section is a thorough study of the history from ancient times to the present, of the reactions of people and nations towards the deaf. The third and last area of the book deals with modern problems related to this condition and the contributions of science, the school and the home towards the solution of these difficulties.

The book is an interesting text concerning a very old as well as a living problem. As the material was originally written in England, it has a tendency to emphasize the situation as it appears in that country. Those professional and lay people who are confronted with the problems of deafness may find this book of value and interest.

HJB

BOOKS RECEIVED

"Aprons for All Occasions," by Lola H. Lehman. (Minneapolis: Burgess Publishing Co., 1954. Spiral bound. 104 pp. $2.75).

"Dance Composition and Production," by Elizabeth R. Hayes. (New York: A. S. Barnes and Co., 1955. 210 pp. $4.00).

Chapter Activities

EASTERN STATES CHAPTER

The Eastern States Chapter held its Spring Conference on Physical Medicine and Rehabilitation at Burrwood, Lloyds Harbor, Long Island on April 2. Burrwood, a facility of the Industrial Home for the Blind, is a former palatial estate on the shores of the Sound and is directed by Harold Ricterman, a member of the chapter and former corrective therapist.

The program of the conference included panels on "The Blind and Deaf-Blind in Corrective Therapy and Rehabilitation" and "Gerontology—Are We Prepared to Face the Problem?" Among the participants in the program were: Dr. Roland Spaulding, Director of Vocational Curriculum, New York University; Winfield S. Rumsey, Director of Vocational Service, Industrial Home for the Blind; Dr. Charles Buchman, Director, Kings Park State Hospital; Dr. Daniel Dancik, Chief, P.M.R.S., V.A. Hospital, Northport, L. I.; Harold Spar, Assistant Executive Director, Industrial Home for the Blind; Dr. John E. Davis, Chief, Corrective Therapy, Washington, D. C. and Mr. Richterman.

REHABILITATION CLINIC AT SPRINGFIELD HOME-COMING

The annual winter Home-Coming held at Springfield College on Feb. 19 included a special demonstration of work with the handicapped and an evaluation panel on adapted physical education activities. The program was supervised by Dr. Cecil W. Morgan, Director of the Rehabilitation Program, and included a demonstration by Frank Deyoe (Class of '42) who is at present, Chief C.T. at the West Roxbury (Mass.) V.A.H.

The New England Chapter of the association met jointly at the college during Home-Coming with Kenneth A. Dening (Class of '40) presiding.

News and Comments

C.P. COURSE OFFERED

A course in the Neuromuscular Diseases of Children with special emphasis on Cerebral Palsy will be offered by Dr. Meyer A. Perlstein at the Cook County Graduate School of Medicine in Chicago beginning June 20, 1955. It will consist of an intensive two-week didactic and clinical course in the diagnosis and management of the neuromuscular diseases and will include field trips to itinerant clinics. Tuition for the course is $225.00 which includes the costs of luncheons and both transportation and hotel reservations during itinerant clinics. Registration, which is limited, may be made by applying to the Registrar, Cook County Graduate School of Medicine, 707 South Wood Street, Chicago, Ill.

PILOT PROGRAM FOR REHABILITATION IN SOUTHEAST ASIA

A pilot program under the joint sponsorship of the United Nations and the World Veterans Federation, which is composed of 121 veteran groups in twenty-nine countries, will soon be inaugurated in Surakarta (Solo) in central Java. Dr. Douglas Toffelmier, a retired captain in the Navy Medical Corps and prominent orthopedic surgeon, has been named to head a group of U.N. technical specialists to develop the Solo center which was originally started in a garage in 1946 by Dr. Raden Soeharso. Dr. Soeharso, during the early days of the Indonesian republic, used the Solo center to fabricate artificial limbs, to hold classes in vocational training and to help resettle the war-disabled. The new government developed the center further by adding housing, but there continues to exist a great need for surgery. There are 300 patients at the center at the present time and the waiting list has 10,000 names.

DR. H. A. VONACHEN RECEIVES 1954 PHYSICIAN'S AWARD

Dr. Harold A. Vonachen, medical director of Caterpillar Tractor Co., Peoria, Ill., was presented with the 1954 Physician's Award by Maj. Gen. Melvin J. Maas, Chairman of the President's Committee, at the banquet session of the Congress on Industrial Health at the Shoreham Hotel, January 25. Dr. Vonachen received the award, which is made annually, for his outstanding accomplishments in the field of industrial medicine at the Caterpillar plant and his lifelong dedication to the problems of the physically handicapped in industry.

Speaking of the award, General Maas said, "Dr. Vonachen is a living example of what one man can accomplish in providing work opportunities for the physically impaired through a process of intelligent, scientific placement. His activities in developing the 'Peoria Plan' which brought into being a dynamic, continuing hire-the-handicapped program in that community is indicative of his humanitarianism, compassion, and selflessness."

BANNISTER WINS MEDICAL AWARD

Dr. Roger Bannister, first man to run the mile in less than four minutes, has been awarded the William Hyde Award for his studies in the physiology of stress conditions. The award is made annually by the Nuffield Provincial Hospitals Trust in Great Britain for distinguished work in relating health and physical education. Dr. Bannister's citation stated in part that he shows "great promise as a medical man who can appreciate through his own personal experience the significance of strains and stresses of the human body when a man is undergoing violent exercise."

FRANKLIN MEDAL TO DR. RUSK

Dr. Howard Rusk, director of the Institute of Physical Medicine and Rehabilitation at New York University-Bellevue Medical Center, was awarded the gold medal of the International Benjamin Franklin Society at the organization's annual luncheon in New York on Jan. 22.

CERTIFICATION RENEWALS

- Deadline for renewal of certification including listing in the Official Registry is **July 1, 1955.**
- Certified members may renew by mailing check for $5.00, payable to "The Association for Physical and Mental Rehabilitation.
- Send all checks to Thomas J. Fleming, Secretary, American Board for the Certification of Corrective Therapists, Box 178, Montrose, N. Y.
- No application forms are necessary for renewal. However, members should apprise the Secretary of changes in address or position by placing this information on a 5 x 8 card and enclosing it with the fee.

CONVENTION NEWS

The 9th Annual Convention of the Association for Physical and Mental Rehabilitation will be held at the Hotel Sheraton-Plaza, Boston, Mass., from June 27 through July 1, 1955.

There will be a variety of interesting activities for the wives of members attending the convention. Mrs. Frank Deyoe, the chairlady for women's activities, and her committee, are raising funds to make certain that the ladies can see the city of Boston and environs without straining purse strings. They may eat at the Wayside Inn (see Longfellow's poem), re-vitalize their blood pressures in the Atlantic Ocean (real salt air, too.), or look over the latest fashions at some of Boston's famous department stores and specialty shops (men, lock your pockets).

For the male bachelors there will be many unplanned social activities as there have been in the past. You fortunate ones who attended previous conventions can bear me out along those lines.

To get to the more serious side, I should like to mention briefly, some of the high points of the program that is planned for you.

On Monday, June 27, there will be a panel discussion on the Driving Program for Disabled. The discussants will include a member of the Mass. Registry of Motor Vehicles, and a corrective therapist who is conducting a program of driver training for quadriplegic patients at one of our designated centers in the V.A.

Also, on the program will be a very informative talk on Civilian Blind Rehabilitation. It has often been stated that the physical educator is the best qualified teacher to instruct the sightless in the numerous skills and functional activities so necessary for complete physical rehabilitation.

The final panel of the day, is one that will concern itself with research.

The panel discussants have been gathering information for a pilot study on the treatment of NPTB patients. They will discuss the role of C.T. in the treatment of the acutely disturbed NPTB patient. There will be a panel on the new developments in psychiatry as it relates to corrective therapy. Dr. John E. Davis, Chief, C.T. V.A. Central office, will be the moderator of this panel.

Our next timely topic will concern the much talked about Public Law 565. As you know, we are very much interested in this law and its raminfications in terms of future expansion in the field of Rehabilitation. Our President, Lou Montavano, who has put forth immeasurable efforts in our behalf, will moderate this panel.

Thursday, June 30.

There will be a panel discussion on the economics of rehabilitation. This will feature leaders in rehabilitation from insurance companies, state and federal hospitals and industry.

During the afternoon the topics for discussion will be concerned with research in C.T. At this time, the speakers will report, not only on the basic techniques of doing research, but will also consider the areas where research is essential.

And of course, our annual banquet will take place on Thursday evening, June 30. There will be the presentation of awards and a nationally-known speaker will address the association with a timely topic.

Friday, July 1.

This part of the program has been reserved for those people in C.T. and related areas who have been contributing much to patient treatment and furthering their own professional growth. We have a number of technical papers that are going to be read at this time.

Also, it isn't too late if you have a particular project that you have been administering as part of your treatment. Why not submit your work to the program committee for approval and get recognition for your efforts?

REUBEN J. MARGOLIN, Ed.D.
Chairman, Public Relations Committee

PRESIDENT TO ADDRESS HANDICAPPED MEETING

President Eisenhower will address members of the President's Committee on Employment of the Physically Handicapped at the annual meeting at the Departmental Auditorium in Washington on May 23.

The President will present prizes totaling $2,000 donated by the Disabled American Veterans to the five national winners of the essay contest sponsored by the Committee. He will also present Judge Sam Cathey of North Carolina with the 1954 President's Trophy, a silver plaque mounted on a mahogany base which was fabricated by patients of the Institute for the Crippled and Disabled in New York City.

The ceremonies will be followed by a panel of employers chaired by Arde Bulova, Employer Committee chairman. Panel participants will include Henry Viscardi, president, Abilities, Inc.; Edward Cushman, industrial relations director, American Motors Corp.; and Ray Fugal, chairman of the National Association of Manufacturers committee on the handicapped.

A new full-length feature film, "The Eternal Sea," produced by Republic Studios will be shown to committee members in the afternoon.

The second day of the meeting will open with an address by Gov. William Stratton of Illinois and will feature a special panel on "Making Public Law 565 Work."

RECENT APPOINTMENTS TO GOVERNOR'S COMMITTEES

Two more members of the Association for Physical and Mental Rehabilitation have been appointed to The Governor's Committee on the Employment of the Physically Handicapped in their respective states.

In Ohio, Arthur Landy, Chief, Corrective Therapy, Chillicothe and a Vice-President of the association was recently named to the State committee by Gov. Frank Lausche. In Wisconsin, George Nash of Wood has been named to a similar state organization.

THE BRACELAND REPORT ON MENTAL ILLNESS

With more than half of the hospital beds in this country devoted to care of the mentally ill, about 250,000 new patients will have their first admission to such hospitals this year, according to figures made public March 7 by the Commission on Organization of the Executive Branch of the Government.

At the present rate of illness, one in every twelve children born in this country will spend some time in a mental institution and the number of prolonged-care patients is steadily increasing at the rate of 10,000 a year.

These figures are contained in a special report on mental illness prepared under the direction of Dr. Francis J. Braceland, of Hartford, Connecticut, a member of the Commission's Task Force on Medical Services. Dr. Braceland is psychiatrist-in-chief of the Institute of Living at Hartford, Clinical Professor of Psychiatry at Yale University, and former president of the American Board of Psychiatry and Neurology.

The report was the basis of the recommendation for additional attention to this phase of health care made to the Congress last week by the Commission through its chairman, former President Herbert Hoover, as part of its recommendations for more efficient medical services in Government.

In line with Dr. Braceland's findings the Commission urged that the Advisory Council of Health which it proposed, study means of establishing cooperative planning among Federal agencies providing psychiatric care, and that the military services and the Veterans Administration give greater emphasis to preventive psychiatric services. It also recommended that the Federal Government, through the Public Health Service, encourage wider research and training of psychiatrists and workers in allied fields.

The growing needs in this field are cited in the special study, and are reported to be largely the result of population growth and the larger proportion of older people rather than any upsurge in the rate of ailments of the mind. The survey stresses the need of recruitment and training of psychiatric specialists to cope with a problem which already is costing the taxpayers $1,000,000,000 a year without counting the "incalculable" losses in manpower.

It points out that most of the 650,000 prolonged-care psychiatric patients are being treated in State and Federal tax-supported mental institutions. It calls mental illness

the greatest single problem in the nation's health picture.

Although the study explains that exact figures cannot be compiled, it says that medical health surveys suggest that as many as 9,000,000 persons, almost 6 per cent of the population, suffer from some form of mental disorder. About 10 per cent of these, or slightly less than 900,000, are considered in need of hospital care.

The most serious bottleneck in the way of proper care for all these cases, according to Dr. Braceland and his aides, is the lack of trained personnel—physicians, nurses and other properly equipped professional and auxiliary workers.

The study cites a statistical survey by the National Institute of Mental Health which shows that in 1950 the need for full-time physicians in State mental institutions of the country was only "about half met," with one State having no psychiatrists at all. These State institutions, it says, also had fewer than 24 per cent of the needed number of graduate nurses, 23 per cent of the desired number of psychiatric social workers and fewer than 74 per cent of the required number of attendants.

Although the medical health personnel situation has improved somewhat in recent years, it adds, shortages in this field continue "not only to hamper efforts to improve general conditions, but also to restrict efforts to discover new methods of treatment and even to prevent the wide application of known therapeutic procedures."

It is only within the past quarter of a century that an appreciable number of psychiatrists has entered private practice, the survey says. More than 4,000 now are active in this work privately. The chief need for private practitioners in this specialized field today exists in cities of fewer than 100,000 population.

State care accounts for about 85 per cent of the patient load in mental hospitals, and about 70 per cent of expenditures nationally. Second largest share of the burden is being carried by the Veterans Administration, which at the end of the fiscal year 1953 had 35 predominantly psychiatric hospitals with 51,000 operating beds and 5,600 additional beds for psychiatric patients in its general and surgical hospitals.

Dr. Braceland indicates the main reasons for the personnel shortage. Lengthy and expensive training is one of the causes. A physician now must serve two years in the armed services, and the addition of five years of training and experience for psychiatric practice to his already long general medical preparation delays his advent into practice until he is in his middle thirties. Because of overcrowding in the hospitals, the work load is unusually heavy, he says, the pay often is inadequate, and job location frequently is in an isolated area, and "the whole picture is overwhelming."

"Although it is evident that the personnel situation is bad now," his report comments, "it has been kept from becoming even more serious by reason of the farsighted training program of the Veterans Administration and the training stipends made possible under the National Mental Health Act."

The report notes that gratifying progress has been made, largely through basic and clinical research, in the handling of certain types of mental disease. Paresis, an organic disease of the brain due to syphilis, is being conquered. Formerly 10 per cent of all persons with syphilis became victims of paresis; today, as a result of new therapeutic methods, fewer than 3 per cent of patients who are adequately treated develop this illness, and the investigators make the happy prediction that "it is not unlikely that this disease can be wiped out in this generation."

Research also has conquered pellagra, with its attendant mental ills. At one time it was estimated that 10 per cent of patients in mental hospitals in the southern part of the country were there as a result of pellagra. With the discovery that this was a vitamin-deficiency disease caused by lack of nicotinic acid in the diet, it became responsive to treatment and is now readily preventable, the report points out.

Medical gains also are noted in other directions. The agitated depressions of middle life have responded dramatically to electric shock therapy, as have depressive illnesses in general. As late as the Nineteen Thirties schizophrenia had a "spontaneous recovery" rate of only 15 to 20 per cent; today 40 to 60 per cent of such patients can be helped by modern treatment.

New methods also are bringing epilepsy under control. That illness a few decades ago contributed a number of patients to mental institutions.

The studies give recognition to the fact that senility often is accompanied by mental infirmities and disorders.

"There is an urgent need for research in the prevention and treatment of the mental diseases of elderly persons," the report explains. "It avails us little if the miracles of modern medicine spare the population for a longer life span if we are to end ingloriously with senile psychoses.

"It is becoming increasingly evident that the psychoses of the older age groups have psychological and social components which may be of as much or even more importance than the physiological and pathological factors.

"Loss of status and position, economic and emotional dependence, lack of useful occupation and a feeling of being no longer worth while, all take their toll in persons who are dependent in later years.

"Research directed at these various components of the illness, and treatment aimed at the alleviation of distressing conditions will not only bear fruit from a humanitarian standpoint but will salvage a number of people who otherwise would become wards of the government."

A survey covering resident mental patients in six States showed that while in 1939 only 14 per cent were 65 years of age, or older, by 1950 the number in this upper-age bracket had risen to 25 per cent.

Dr. Braceland's report shows that although there is little difference regionally in the incidence of mental disease, the ratio of mental hospital patients to population varies widely in the States, from about 2 per 1,000 in New Mexico to 6 per 1,000 in New York. Although marked strides have been made, it says, in the rate at which patients are discharged, this gain has been more than offset by the higher number of admissions and the fact that mental cases now have longer life spans.

The rolls of the mental hospitals, the study found, give only a partial picture of the problem. The figures do not include the large number of persons suffering from mental disorders and kept at home or in sanitaria, nursing homes and general hospitals whose patients are not included in the psychiatric hospital statistics.

Research also has brought progress in the field of psychosomatic medicine and has inspired a new recognition of the importance of emotional factors in many diseases formerly considered to be of obscure origin.

Asthma, colitis, gastric and duodenal ulcers, hypertension and other ailments, some of which have become associated with the pace of life today, Dr. Braceland asserts, now are clearly recognized as having emotional components which must be recognized and treated if the illness itself is to be overcome.

The importance of this factor is emphasized by the report, which cites estimates that between 50 and 70 per cent of the patients coming to physicians' offices today have sicknesses with emotional angles.

"It is only by means of continued research," Dr. Braceland concludes, "that any one of these serious psychiatric problems will be met, and research requires trained personnel and sufficient funds with which to accomplish it."

Community health services have been found to have a vital responsibility for recognition of mental illness at its inception and by "scientific vigilance" to get or give treatment for the patient "before commitment is necessary or before tragedy occurs."

GIVE TO THE

SCHOLARSHIP FUND

WE INTRODUCE

To the great veterans' organizations, such as the American Legion, no greater problem exists today than does the welfare of the ex-serviceman who is ill or disabled. An example of the Legion's determination to keep this problem before the American public is its recent conference on rehabilitation in Washington where nearly 1,000 delegates from all parts of the United States gathered to discuss current trends in veterans' rehabilitation. Because of the necessity for coordinating its efforts in this direction, the Legion maintains a National Rehabilitation Commission which administers a network of area offices through its headquarters in the nation's capital.

Although few persons in rehabilitation are aware of T.O. Kraabel's first name (it's Torger), the astute director of the National Rehabilitation Commission of the Legion is one of the best-known administrators in the field and his opinions on all aspects of problems related to this country's 21,000,000 veterans are widely sought. Having served the organization in his present capacity from October, 1941 to the present, his sagacity and wisdom have been garnered through the war years and their aftermath when modern rehabilitation methods were first introduced. For his lengthy service and dedication to human welfare, he was awarded the honorary degree of L.H.D. by Luther College, his alma mater in June, 1950.

Mr. Kraabel was born in North Dakota of Norwegian-American parents. He received his B.A. from Luther College in Decorah, Iowa in 1915 and was attending the University of North Dakota Law School in 1917 when he was inducted into the Army. In August of 1918, he went overseas as an infantry sergeant and later attended officers candidate school in France where he received his commission in April, 1919. Four months later, Mr. Kraabel returned to North Dakota where he took a position as cashier of the Farmers State Bank in Lawton. After five years of banking he received his first opportunity to work in veterans affairs, the position of Finance Officer of the Veterans Bureau at Fargo.

From the role of finance officer, Mr. Kraabel moved up the ladder, two years later, when he became Veterans Service Commissioner for the State of North Dakota and in 1937 he moved on to Washington where he has worked steadfastly ever since.

In the capital, Mr. Kraabel's first position was as Claims Representative for the Legion's National Rehabilitation Commission and he gradually advanced to the position of Executive Secretary, Acting Director, and finally, Director of the Commission in which capacity he has served ever since.

In addition to his Legion duties, Mr. Kraabel is very active in church affairs, having served as financial secretary, member of the council, and treasurer of the Grace Evangelical Lutheran Church in Washington. As an authority on national rehabilitation problems, he is a frequent speaker before prominent gatherings and conferences and has addressed the Association for Physical and Mental Rehabilitation on several occasions.

WE'LL SEE YOU IN THE HUB

Ninth Annual Scientific and Clinical Conference

The Association for Physical and Mental Rehabilitation

The Sheraton-Plaza

BOSTON, MASS.

June 27 - July 1

An outstanding program of lectures, demonstrations and panel discussions by national authorities of particular interest to:

- Physicians
- Counselling Psychologists
- Hospital Administrators
- Corrective Therapists
- Professional Personnel in Rehabilitation
- Vocational Counselors
- Nurses
- Physical Educators
- Allied Professions

SELECTED, ANNOTATED BIBLIOGRAPHY OF CURRENT LITERATURE-1954

CONTINUED FROM VOL. 9, No. 1

MULTIPLE SCLEROSIS–MEDICAL TREATMENT

Marks, Morton (400 E. 34th St., New York 16, N. Y.)

Rehabilitation of the patient with multiple sclerosis, by Morton Marks and Joseph Goodgold. *J. Am. Med. Assn.* Oct. 23, 1954. 156:8:755-757.

Rehabilitation of the patient with multiple sclerosis has distinct limitations; emphasis is placed on the acquisition of ability to perform the activities of daily living within the patient's specific environment. The rehabilitation program has no significant effect on the primary disease process itself but appears to be a factor in reducing the extent and severity of secondary complications and the psychological aspects are of value. Therapeutic techniques and their value to these patients are assessed.

MUSCULAR DYSTROPHY–MENTAL HYGIENE

Morrow, Robert S. (VA Hosp., 130 W. Kingsbridge Rd., Bronx 38, N. Y.)

The psycho-social factors in muscular dystrophy by Robert S. Morrow and Jacob Cohen. *J. Child Psychiatry.* Apr., 1954. 3:1:70-80. Reprint.

A discussion of the findings of a study to determine the nature and extent of psychological and social maladjustment of muscular dystrophy patients and attitudes of their parents. Recommendations are made for overcoming emotional maladjustments of patients and parents. Need for further education with emphasis on special needs of the child with muscular dystrophy for more active social activities, organized play, and the development of hobbies and an opportunity to get away from the home environment frequently are seen as major problems. A paper read at the Second Medical Conference, May 17-18, 1952, of the Muscular Dystrophy Associations of America and summarized in its published proceedings.

MUSIC THERAPY

Fields, Beatrice

Music as an adjunct in the treatment of brain-damaged patients. *Am. J. Phys. Med.* Oct., 1954.33:5:273-283.

". . . This paper is a report of the medically oriented use of music with brain-damaged patients, limited to the observable (and quantitatively measurable) results of the use of music in treatment directed toward an increase in motor coordination. . . ." Methods of treatment used with 4 patients who had been terminated by other therapies because it was assumed they had received maximum benefit are described. Improvements in coordination among 24 of the 28 patients treated suggest the value of using music as an adjunct in medical treatment in the area of motor coordination.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS–REPORTS–1954

National Society for Crippled Children and Adults.

Into the light; 1954 annual report of the . . . Chicago, The Society, 1954. 32 p. illus.

A report covering activities of the National Society for Crippled Children and Adults and its State Society affiliates during the past year.

Single copies free from the Society.

NEUROLOGY

Bobath, Berta (Cerebral Palsy Center, 3 Park Crescent, London W. 1, England)

A study of abnormal postural reflex activity in patients with lesions of the central nervous system, I. *Physiotherapy.* Sept., 1954. 40:9: 259-267.

"This paper is the result of an analysis of the motor behavior of patients with various lesions of the central nervous system. The majority of cases were children suffering from cerebral palsy. . . . A number of cases were adults suffering from cerebral palsy, or of residual hemiplegia due to vascular accident or head injury, while a few were of disseminated sclerosis and Friedreich's ataxia. . . ."—Introduction. This is Part I of a thesis on which a Fellowship has been awarded by the Chartered Society of Physiotherapy; in this part the tonic or standing reflexes are described. The second part will give a description of higher postural reflexes, such as the righting reflexes and the equilibrium reactions.

NEUROLOGY

Knowlton, G. Clinton (Dept. of Physiology, Emory Univ. School of Med., Emory University, Georgia)

Physiological background for neuromuscular reeducation and coordination. *Arch. Phys. Med. and Rehabilitation.* Oct., 1954. 35:10:635-638.

Outlines the broad principles which form the foundation for a rational retraining program.

PHYSICAL THERAPY

Voss, Dorothy E. (Calif. Rehab. Center, Vallejo, Calif.)

Patterns of motion for proprioceptive neuromuscular facilitation, by Dorothy E. Voss and Margaret Knott. *Brit. J. Phys. Med.* Sept., 1954. 17:9:191-198.

Various patterns of facilitation, basic to other techniques of proprioceptive neuromuscular facilitation, are described, giving the components of the motion and the muscles contracting from origin to insertion, in each case. ". . . The patterns are most easily observed in the normal subject and are not related to pathological reflexes. The versatility of muscles in the patterns seems to progress from proximal to distal. . . ."

PHYSICAL MEDICINE

Schram, Duane A. (4435 Beacon Ave., Seattle 8, Wash.)

Prescription for mobilization in paralytic conditions. *Arch. Phys. Med. and Rehabilitation.* Oct., 1954. 35:10:648-651.

Stresses the need for a thorough evaluation of neuromuscular residuals before prescribing mobilization procedures, and briefly describes the various methods for mobilization of tightness or contractures. The use of apparatus with or without surgery is the more versatile method of mobilization but can not be utilized without trained personnel. In attaining the desired range of joint stability, it is important to leave an optimum amount of tightness for stability in severely weak extremities.

Solomon, Walter M. (2020 E. 93rd St., Cleveland 6, Ohio)

Progress in physical medicine and rehabilitation. *J. Am. Med. Assn.* Oct. 23, 1954. 156:8:753-755.

Developments in physical medicine and rehabilitation include more effective utilization of the different types of therapies, recognition of its importance by the medical profession, its extension to and influence on medical schools, expansion of services in hospitals and the rehabilitation centers, and intensified research into its methods. This is the Chairman's address presented before the Section on Physical Medicine and Rehabilitation at the annual meeting of the American Medical Association, 1954.

REHABILITATION

David, George W.

Rehabilitation; resource and opportunity. *Louisiana Welfare.* July, 1954. 14:3:6-10, 21.

A discussion of the place of the public assistance worker in rehabilitation programs, in counseling the disabled to seek such services and in serving as the link between the handicapped and the rehabilitation team.

This article is a summary of a paper presented at the American Public Welfare Association, Regional Conference, Shreveport, April 1, 1954.

Desmond, Thomas C.

Rehabilitation for employment. *Today's Health.* Oct., 1954. 32:10: 28-29, 64-66.

The author who is chairman of the New York State Joint Legislative Committee on Problems of the Aging tells of the need for rehabilitation of the older worker, its value to the individual and to the national

economy. The provision of sheltered workshops for those unable to return to full employment in a competitive labor market can supply the means for self-support and increased health and well-being for the handicapped worker.

REHABILITATION—BIBLIOGRAPHY

National Society for Crippled Children and Adults.

A selected list of periodicals that publish articles concerning the handicapped, compiled and distributed by the Library. Rev. October, 1954. Chicago, The Soc., 1954. 8 p. Mimeo.

This revised listing of periodicals includes those dealing with rehabilitation of the handicapped and related fields. Entries give information on the publishing source, address, price, and number of issues yearly. Periodicals range from those publishing articles of professional interest to those intended for lay readers and the handicapped themselves.

Single copies free from the Library, National Society for Crippled Children and Adults.

REHABILITATION CENTERS—OHIO

Worden, Ralph E. (Rehabilitation Center, Ohio State Univ., Columbus, Ohio)

The use of university facilities in a broad rehabilitation program for the disabled, by Ralph E. Worden and Kenneth W. Hamilton. *Arch. Phys. Med. and Rehabilitation.* Oct., 1954. 35:10:621-626.

Tells of the various services available at the rehabilitation center located on the campus at Ohio State University, its advantages both to the public and to the various departments of the University which cooperate in providing the different types of services necessary to total rehabilitation. The center is a valuable source of inservice training to members of the various professions engaged in rehabilitation work and provides opportunity for research in the theory and practice of rehabilitation.

REHABILITATION—MASSACHUSETTS

Lanigan, William (Medford Ambulation Clinic, Medford, Mass.)

A community ambulation and exercise clinic, by William Lanigan and Frank S. Deyoe. *J., Assn. for Phys. and Mental Rehabilitation.* July-Aug., 1954. 8:4:117-119.

A part-time Ambulation and Exercise Clinic, established in a Boston suburb, provides a supervised conditioning program, ambulation training, training in self-care and activities of daily living, instruction for parents and those caring for the disabled, and social and psychological adjustment to the disability. Several case histories illustrate progress achieved by patients referred to the clinic for rehabilitation training.

REHABILITATION CENTERS—GREAT BRITAIN

Toabe, Sidney R.

The medical rehabilitation centre in Great Britain. *J., Assn. for Phys. and Mental Rehabilitation.* July-Aug., 1954. 8:4:120-121.

A brief description of types of medical rehabilitation centers in England, the typical staff for a centre treating 100 patients, physical plant, and treatment program. The writer, a Fulbright Scholar in Rehabilitation, gives his reasons for advocating rehabilitation centers separate from the general medical or orthopaedic hospital.

REHABILITATION CENTERS—ILLINOIS

Kendell, H. Worley (Peoria Institute of Phys. Med. and Rehab., Peoria, Ill.)

Rehabilitation unit for the general hospital, by H. Worley Kendell, Joseph N. Schaeffer, and Hugh J. McMenamin. *Modern Hospital.* Sept., 1954. 83:3:73-76.

Points out the differences between the self-contained rehabilitation center having its own beds and operated by and for the physical medicine and rehabilitation program and the rehabilitation center located in the general hospital. Administration problems of the center in the hospital are explained. The Institute of Peoria is used to illustrate how some of these problems have been worked out.

REHABILITATION CENTERS–OHIO

Schwarberg, Clifford F. (Univ. Hosp., Ohio State Univ., Columbus, Ohio)

Rehabilitation case study, by Clifford F. Schwarberg and J. Milo Anderson. *Hospitals.* Sept., 1954. 28:9: 67-69. Reprint.

A description of the establishment of the rehabilitation center at University Hospital, Ohio State University, its operating policies, its administration and program. Results of the work, observations confirmed by experience in the Center, and some of the problems of administering rehabilitation services in connection with a general hospital are discussed.

REHABILITATION–RESEARCH

Margolin, Reuben J. (VA Hospital, Brockton, Mass.)

Action research and its application to medical rehabilitation. *Am. Arch. Rehabilitation Therapy.* Sept., 1954. 2:3:2-9.

The historical development and the importance of action research in medical rehabilitation are discussed. Differences between action research and traditional research are pointed out, and varieties, techniques and methods of action research are reviewed. Suggestions are made for projects and the conditions necessary for their implementation. The relationship between research action and in-service training was stressed as integral to a complete program of medical rehabilitation.

WALKING–EQUIPMENT

Schram, Duane A. (VA Hosp., Seattle, Wash.)

Gait-training bars. *Arch. Phys. Med. and Rehabilitation.* Aug., 1954. 35:8:513-514.

A description of parallel bars designed to simulate crutches as closely as possible while still retaining the fundamental qualities of stability inherent in a parallel bar unit. Advantages in this type of unit are its adjustability to the individual patient, effectiveness in preparing the patient for crutch walking, and its assembly either as a stationary or mobile unit.

WORLD VETERANS FEDERATION

Guicharnaud, Rene (27, rue de la Michodiere, Paris 2, France)

The rehabilitation program. *Rehab. Bul., World Veterans Federation.* July, 1954. 4:3-5.

Summarizes briefly the activities of the World Veterans Federation through participation in international conferences, courses and seminars and in field surveys made preparatory to establishing rehabilitation and resettlement facilities.

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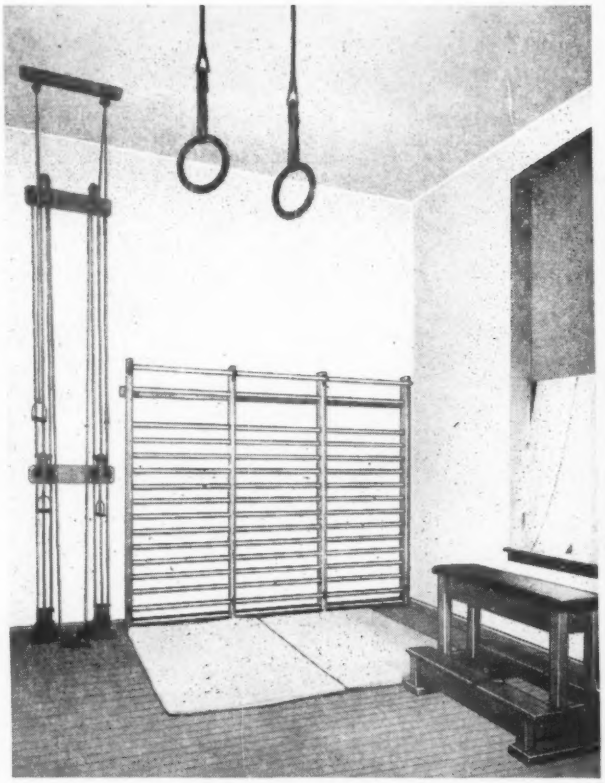

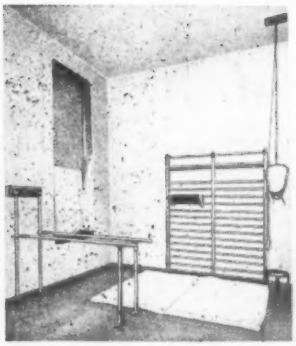

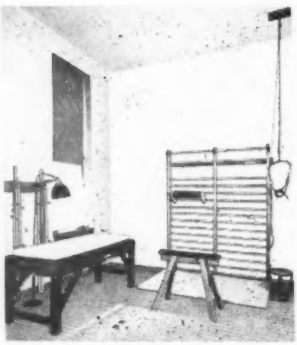

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